```
=> dhis
DHIS IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> d his

     (FILE 'HOME' ENTERED AT 11:48:54 ON 29 AUG 2007)

     FILE 'STNGUIDE' ENTERED AT 11:49:06 ON 29 AUG 2007

     FILE 'HCAPLUS' ENTERED AT 11:50:33 ON 29 AUG 2007
L1             0 SEA ABB=ON PLU=ON  "CYCLOHEXANEDIACETIC ACID"+PFT, OLD, NEW/CT

     FILE 'REGISTRY' ENTERED AT 11:55:02 ON 29 AUG 2007
                E CYCLOHEXANEDIACETIC/CN

     FILE 'HCAPLUS' ENTERED AT 11:55:03 ON 29 AUG 2007
                S E4

     FILE 'REGISTRY' ENTERED AT 11:56:31 ON 29 AUG 2007
L2             1 S E4/CN

     FILE 'HCAPLUS' ENTERED AT 11:56:31 ON 29 AUG 2007
L3             8 S L2
                E CYCLOHEXANEDIACETIC ACID ANHYDRIDE
L4        230564 S ANHYDRIDE
L5             0 S L4 (3W) L3
L6        230564 SEA ABB=ON PLU=ON ANHYDRIDE
L7          1633 S ABB=ON PLU=ON MONOAMIDE
L8         19338 S ABB=ON PLU=ON PRECIPITATION+PFT, OLD, NEW/CT
L9             2 S ABB=ON PLU=ON ACIDIFICATION+PFT, NEW, OLD/CT
L10       214418 S ABB=ON PLU=ON AMMONIA
L11            0 S "HYDROCHLORIC ACID"+PFT, OLD, NEW/CT
                E HYDROCHLORIC ACID
L12           12 S E5
L13            0 S ABB=ON PLU=ON "ACETIC ANHDRIDE"+PFT, NEW, OLD/CT
                E ACETIC ANHYDRIDE
L14       247054 S ACETIC
L15        26509 S L14 (1W) L4
L16      6805049 S ABB=ON PLU=ON SYNTH OR SYNTHE? OR PREPARTION OR PRODUC? OR PR
L17       157279 S ABB=ON PLU=ON AMINATION+PFT, OLD, NEW, RT/CT
                E US4024175/PN
L18            1 S E3
                SELECT RN L18 1

     FILE 'REGISTRY' ENTERED AT 12:26:48 ON 29 AUG 2007
L19           11 S E1-E11
L20            0 S ABB=ON PLU=ON "1,1-CYCLOHEXANEDIACETIC ACID"+RTCS, NEW, OLD/C
L21            0 S ABB=ON PLU=ON GABAPENTINE+RTCS, NEW, OLD, PFT/CT
L22            7 S GABAPENTIN
L23            0 S L22 AND L2
L24            0 S L22 AND L3

     FILE 'HCAPLUS' ENTERED AT 12:40:47 ON 29 AUG 2007
L25         1956 S GABAPENTIN
```

```
L26             0 S L25 AND L3
L27            20 S L25 AND L6
L28             4 S L27 AND L7
L29            99 S 1,1-CYCLOHEXANEDIACETIC ACID
L30             4 S L29 (3W) L6
L31             3 S L30 NOT L28
L32             2 S L29 AND L17 NOT L28
L33             2 S L29 AND L8
L34             0 S L29 AND L9 NOT L28

     FILE 'CASREACT' ENTERED AT 12:53:00 ON 29 AUG 2007
L35            26 S 1,1-CYCLOHEXANEDIACETIC ACID
L36         19903 S AMINATION
L37           235 S PRECIPITATION
L38           243 S MONOAMIDE
L39             1 S 1,1-CYCLOHEXANEDIACETIC ACID ANHYDRIDE
L40             2 S L35 AND L36
L41          3188 S ACIDIFICATION
L42             6 S L38 AND L35
L43             2 S L42 AND L37
L44          8354 S AMMONIA
L45             3 S L44 AND L29
L46             1 S L45 NOT L28

=> log off
ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF
LOGOFF? (Y)/N/HOLD:y
STN INTERNATIONAL LOGOFF AT 13:07:03 ON 29 AUG 2007
```

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:SSPTAYKC1621

PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * * Welcome to STN International * * * * * * * * * *

NEWS 1		Web Page for STN Seminar Schedule - N. America
NEWS 2	MAY 01	New CAS web site launched
NEWS 3	MAY 08	CA/CAplus Indian patent publication number format defined
NEWS 4	MAY 14	RDISCLOSURE on STN Easy enhanced with new search and display fields
NEWS 5	MAY 21	BIOSIS reloaded and enhanced with archival data
NEWS 6	MAY 21	TOXCENTER enhanced with BIOSIS reload
NEWS 7	MAY 21	CA/CAplus enhanced with additional kind codes for German patents
NEWS 8	MAY 22	CA/CAplus enhanced with IPC reclassification in Japanese patents
NEWS 9	JUN 27	CA/CAplus enhanced with pre-1967 CAS Registry Numbers
NEWS 10	JUN 29	STN Viewer now available
NEWS 11	JUN 29	STN Express, Version 8.2, now available
NEWS 12	JUL 02	LEMBASE coverage updated
NEWS 13	JUL 02	LMEDLINE coverage updated
NEWS 14	JUL 02	SCISEARCH enhanced with complete author names
NEWS 15	JUL 02	CHEMCATS accession numbers revised
NEWS 16	JUL 02	CA/CAplus enhanced with utility model patents from China
NEWS 17	JUL 16	CAplus enhanced with French and German abstracts
NEWS 18	JUL 18	CA/CAplus patent coverage enhanced
NEWS 19	JUL 26	USPATFULL/USPAT2 enhanced with IPC reclassification
NEWS 20	JUL 30	USGENE now available on STN
NEWS 21	AUG 06	CAS REGISTRY enhanced with new experimental property tags
NEWS 22	AUG 06	BEILSTEIN updated with new compounds
NEWS 23	AUG 06	FSTA enhanced with new thesaurus edition
NEWS 24	AUG 13	CA/CAplus enhanced with additional kind codes for granted patents
NEWS 25	AUG 20	CA/CAplus enhanced with CAS indexing in pre-1907 records
NEWS 26	AUG 27	Full-text patent databases enhanced with predefined patent family display formats from INPADOCDB
NEWS 27	AUG 27	USPATOLD now available on STN
NEWS 28	AUG 28	CAS REGISTRY enhanced with additional experimental spectral property data

NEWS EXPRESS 29 JUNE 2007: CURRENT WINDOWS VERSION IS V8.2,
CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
AND CURRENT DISCOVER FILE IS DATED 05 JULY 2007.

NEWS HOURS	STN Operating Hours Plus Help Desk Availability
NEWS LOGIN	Welcome Banner and News Items
NEWS IPC8	For general information regarding STN implementation of IPC 8

Enter NEWS followed by the item number or name to see news on that specific topic.

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* * * * * * * * * * * * * * * * STN Columbus * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 11:48:54 ON 29 AUG 2007

=> file stnguide

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'STNGUIDE' ENTERED AT 11:49:06 ON 29 AUG 2007
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Aug 24, 2007 (20070824/UP).

=> file hcaplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.12	0.33

FILE 'HCAPLUS' ENTERED AT 11:50:33 ON 29 AUG 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

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FILE COVERS 1907 - 29 Aug 2007 VOL 147 ISS 10
FILE LAST UPDATED: 28 Aug 2007 (20070828/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> sea abb=on plu=on "cyclohexanediacetic acid"=pft,old,new/ct
NUMERIC VALUE NOT VALID 'PFT,OLD,NEW'
Numeric values may contain 1-8 significant figures. If range notation is used, both the beginning and the end of the range must be specified, e.g., '250-300/MW'. Expressions such as '250-/MW' are not

```
allowed.  To search for values above or below a given number, use the
>, =>, <, or <= operators, e.g., 'MW => 250'.  Text terms cannot be
used in numeric expressions.  If you specify a unit, it must be
dimensionally correct for that field code.  To see the unit
designations for field codes in the current file, enter "DISPLAY UNIT
ALL" at an arrow prompt (=>).

=> display unit all
UNITS CONVERSION IS NOT AVAILABLE IN THE CURRENT FILE


=> sea abb=on plu=on  "cyclohexanediacetic acid"+pft, old, new/ct
'"CYCLOHEXANEDIACETIC ACID"' NOT IN RELATIONSHIP FILE
RELATIONSHIP CODE ',OLD,NEW' IGNORED
L1            0 "CYCLOHEXANEDIACETIC ACID"+PFT, OLD, NEW/CT  (1 TERM)

=> e cyclohexanediacetic/cn
   REG1stRY INITIATED
Substance data EXPAND from CAS REGISTRY in progress...


E1            1      CYCLOHEXANEDECYLAMINE, (AMINOMETHYL)-4-BUTYL-/CN
E2            1      CYCLOHEXANEDECYLAMINE, HYDROCHLORIDE/CN
E3            0 --> CYCLOHEXANEDIACETIC/CN
E4            1      CYCLOHEXANEDIACETIC ACID/CN
E5            1      CYCLOHEXANEDIACRYLATE/CN
E6            1      CYCLOHEXANEDIAMINE/CN
E7            1      CYCLOHEXANEDIAMINE, C,C,C,C-TETRAMETHYL-/CN
E8            1      CYCLOHEXANEDIAMINE, C-((AMINOCYCLOHEXYL)METHYL)-/CN
E9            1      CYCLOHEXANEDIAMINE, C-((AMINOCYCLOHEXYL)METHYL)-C-METHYL-/CN
E10           1      CYCLOHEXANEDIAMINE, HOMOPOLYMER/CN
E11           1      CYCLOHEXANEDIAMINE, METHYL-/CN
E12           1      CYCLOHEXANEDIAMINE, N,N'-DIPHENYL-/CN


=> s e4
   REG1stRY INITIATED
Substance data SEARCH and crossover from CAS REGISTRY in progress...
Use DISPLAY HITSTR (or FHITSTR) to directly view retrieved structures.




L3            8 L2

=> display hitstr
ENTER (L3), L# OR ?:13
ENTER ANSWER NUMBER OR RANGE (1):1-8

L3   ANSWER 1 OF 8  HCAPLUS  COPYRIGHT 2007 ACS on STN
IT   152848-09-4, Cyclohexanediacetic acid
     RL: CPS (Chemical process); PEP (Physical, engineering or chemical
     process); TEM (Technical or engineered material use); PROC (Process); USES
     (Uses)
        (heat-transfer medium composition with corrosion prevention in pipings of
```

water cooling system)
RN 152848-09-4 HCAPLUS
CN Cyclohexanediacetic acid (9CI) (CA INDEX NAME)

2 [D1—CH_2—CO_2H]

L3 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN
IT 152848-09-4, Cyclohexanediacetic acid
RL: NUU (Other use, unclassified); USES (Uses)
(cleaning of filtration membranes using peracids)
RN 152848-09-4 HCAPLUS
CN Cyclohexanediacetic acid (9CI) (CA INDEX NAME)

2 [D1—CH_2—CO_2H]

L3 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN
IT 152848-09-4, Cyclohexanediacetic acid
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(baroresistant buffer mixts. for biochem. analyses)
RN 152848-09-4 HCAPLUS
CN Cyclohexanediacetic acid (9CI) (CA INDEX NAME)

2 [D1—CH_2—CO_2H]

L3 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN
IT 152848-09-4, Cyclohexanediacetic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(microwave irradiation process for preparing Me carboxylate esters from carboxylate salts or carboxylic acids and di-Me carbonate)

RN 152848-09-4 HCAPLUS
CN Cyclohexanediacetic acid (9CI) (CA INDEX NAME)

2 [D1—CH_2—CO_2H]

L3 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN
IT 152848-09-4D, Cyclohexanediacetic acid, acrylic-alkyd polymers
RL: TEM (Technical or engineered material use); USES (Uses)
(alkyd/acrylic latexes for cleaning, polishing, and protecting hard surfaces)
RN 152848-09-4 HCAPLUS
CN Cyclohexanediacetic acid (9CI) (CA INDEX NAME)

2 [D1—CH_2—CO_2H]

L3 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN
IT 152848-09-4D, Cyclohexanediacetic acid, anhydrides
RL: RCT (Reactant); RACT (Reactant or reagent)
(aqueous process for preparing amido-carboxylic acids by amidation of an amino
acid with a carboxylic acid anhydride)
RN 152848-09-4 HCAPLUS
CN Cyclohexanediacetic acid (9CI) (CA INDEX NAME)

2 [D1—CH_2—CO_2H]

L3 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN
IT 152848-09-4, Cyclohexanediacetic acid
RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of amido-carboxylic acids from lactams/amino acids and carboxylic acids/esters wherein hydrolysis and amidation reactions are conducted simultaneously in water)
RN 152848-09-4 HCAPLUS
CN Cyclohexanediacetic acid (9CI) (CA INDEX NAME)

2 [D1—CH_2—CO_2H]

L3 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2007 ACS on STN
IT 152848-09-4, Cyclohexanediacetic acid
RL: BIOL (Biological study)
(nail polishes containing)
RN 152848-09-4 HCAPLUS
CN Cyclohexanediacetic acid (9CI) (CA INDEX NAME)

2 [D1—CH_2—CO_2H]

```
=> e cyclohexanediacetic acid anhydride
E1            1     CYCLOHEXANEDIACETATO/BI
E2          249     CYCLOHEXANEDIACETIC/BI
E3            0 --> CYCLOHEXANEDIACETIC ACID ANHYDRIDE/BI
E4            1     CYCLOHEXANEDIACETICDIACETATO/BI
E5           39     CYCLOHEXANEDIACETIMIDE/BI
E6            2     CYCLOHEXANEDIACETIMIDES/BI
E7            2     CYCLOHEXANEDIACETIMIDO/BI
E8            1     CYCLOHEXANEDIACETOMETHYLIMIDE/BI
E9           10     CYCLOHEXANEDIACETONITRILE/BI
E10           1     CYCLOHEXANEDIACETOYL/BI
E11           5     CYCLOHEXANEDIACETYL/BI
E12           4     CYCLOHEXANEDIACID/BI

=> s anhydride
        219700 ANHYDRIDE
         33599 ANHYDRIDES
L4      230564 ANHYDRIDE
                (ANHYDRIDE OR ANHYDRIDES)

=> s l4 (3w) l3
```

```
L5            0 L4 (3W) L3

=> sea abb=on plu=on anhydride
         219700 ANHYDRIDE
          33599 ANHYDRIDES
L6       230564 ANHYDRIDE
                (ANHYDRIDE OR ANHYDRIDES)

=> s abb=on plu=on monoamide
           1258 MONOAMIDE
            583 MONOAMIDES
L7         1633 MONOAMIDE
                (MONOAMIDE OR MONOAMIDES)

=> s abb=on plu=on precipitation+PFT, old, new/ct
L8        19338 PRECIPITATION+PFT, OLD, NEW/CT  (2 TERMS)

=> s abb=on plu=on acidification+pft, new, old/ct
L9            2 ACIDIFICATION+PFT, NEW, OLD/CT  (1 TERM)

=> s abb=on plu=on ammonia
         214357 AMMONIA
            156 AMMONIAS
L10      214418 AMMONIA
                (AMMONIA OR AMMONIAS)

=> s "hydrochloric acid"+pft, old, new/ct
L11           0 "HYDROCHLORIC ACID"+PFT, OLD, NEW/CT  (2 TERMS)

=> e hydrochloric acid
E1            2     HYDROCHLORIATE/BI
E2       104429     HYDROCHLORIC/BI
E3            0 --> HYDROCHLORIC ACID/BI
E4            2     HYDROCHLORICA/BI
E5           12     HYDROCHLORICACID/BI
E6           10     HYDROCHLORICE/BI
E7            1     HYDROCHLORICF/BI
E8            1     HYDROCHLORICI/BI
E9            1     HYDROCHLORICOR/BI
E10           1     HYDROCHLORICS/BI
E11          18     HYDROCHLORICUM/BI
E12           1     HYDROCHLORICUS/BI

=> s e5
L12          12 HYDROCHLORICACID/BI

=> s abb=on plu=on "acetic anhdride"+pft, new, old/ct
'"ACETIC ANHDRIDE"' NOT IN RELATIONSHIP FILE
RELATIONSHIP CODE ',NEW,OLD' IGNORED
L13           0 "ACETIC ANHDRIDE"+PFT, NEW, OLD/CT  (1 TERM)

=> e acetic anhydride
E1            3     ACETIATE/BI
E2       247045     ACETIC/BI
E3            0 --> ACETIC ANHYDRIDE/BI
E4            2     ACETIC2/BI
E5            8     ACETICA/BI
E6            1     ACETICACETATE/BI
E7            3     ACETICACI/BI
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E8          34     ACETICACID/BI
E9           2     ACETICACIDETHYL/BI
E10          1     ACETICACIDMONOHYDROCHLORIDE/BI
E11          1     ACETICACIDSHOWED/BI
E12          1     ACETICACIDTERT/BI

=> s acetic
        247045 ACETIC
            22 ACETICS
L14     247054 ACETIC
                 (ACETIC OR ACETICS)

=> d his

     (FILE 'HOME' ENTERED AT 11:48:54 ON 29 AUG 2007)

     FILE 'STNGUIDE' ENTERED AT 11:49:06 ON 29 AUG 2007

     FILE 'HCAPLUS' ENTERED AT 11:50:33 ON 29 AUG 2007
L1           0 SEA ABB=ON PLU=ON  "CYCLOHEXANEDIACETIC ACID"+PFT, OLD, NEW/CT

     FILE 'REGISTRY' ENTERED AT 11:55:02 ON 29 AUG 2007
               E CYCLOHEXANEDIACETIC/CN

     FILE 'HCAPLUS' ENTERED AT 11:55:03 ON 29 AUG 2007
               S E4

     FILE 'REGISTRY' ENTERED AT 11:56:31 ON 29 AUG 2007
L2           1 S E4/CN

     FILE 'HCAPLUS' ENTERED AT 11:56:31 ON 29 AUG 2007
L3           8 S L2
               E CYCLOHEXANEDIACETIC ACID ANHYDRIDE
L4      230564 S ANHYDRIDE
L5           0 S L4 (3W) L3
L6      230564 SEA ABB=ON PLU=ON ANHYDRIDE
L7        1633 S ABB=ON PLU=ON MONOAMIDE
L8       19338 S ABB=ON PLU=ON PRECIPITATION+PFT, OLD, NEW/CT
L9           2 S ABB=ON PLU=ON ACIDIFICATION+PFT, NEW, OLD/CT
L10     214418 S ABB=ON PLU=ON AMMONIA
L11          0 S "HYDROCHLORIC ACID"+PFT, OLD, NEW/CT
               E HYDROCHLORIC ACID
L12         12 S E5
L13          0 S ABB=ON PLU=ON "ACETIC ANHDRIDE"+PFT, NEW, OLD/CT
               E ACETIC ANHYDRIDE
L14     247054 S ACETIC

=> s l14 (1w) l4
L15      26509 L14 (1W) L4

=> s abb=on plu=on synth or shythe? or preparation or formation or product? or form
or forming orforms or formed or prep
          326 SYNTH
            2 SHYTHE?
      1538677 PREPARATION
        80195 PREPARATIONS
      1614792 PREPARATION
                 (PREPARATION OR PREPARATIONS)
      2837881 PREPN
```

```
        210301 PREPNS
       2996287 PREPN
                 (PREPN OR PREPNS)
       3838782 PREPARATION
                 (PREPARATION OR PREPN)
       2790557 FORMATION
         55019 FORMATIONS
       2821463 FORMATION
                 (FORMATION OR FORMATIONS)
       2950325 PRODUCT?
       1642545 FORM
        621152 FORMS
       2114356 FORM
                 (FORM OR FORMS)
        660407 FORMING
            38 FORMINGS
        660423 FORMING
                 (FORMING OR FORMINGS)
             0 ORFORMS
             0 FORMING ORFORMS
                 (FORMING(W)ORFORMS)
       1541162 FORMED
             3 FORMEDS
       1541164 FORMED
                 (FORMED OR FORMEDS)
        132209 PREP
          2288 PREPS
        134283 PREP
                 (PREP OR PREPS)
SYSTEM LIMITS EXCEEDED - SEARCH ENDED
The search profile you entered was too complex or gave too many
answers.  Simplify or subdivide the query and try again.  If you have
exceeded the answer limit, enter DELETE HISTORY at an arrow prompt
(=>) to remove all previous answers sets and begin at L1.  Use the
SAVE command to store any important profiles or answer sets before
using DELETE HISTORY.

=> s abb=ob plu=on synth or synthe? or preparation or produc? or prep
'ABB=OB' IS NOT VALID HERE
The SET parameter ABBREVIATION can be set to values 'ON' or 'OFF'.
For more information enter, "HELP SET ABBREVIATION" at an arrow
prompt (=>).

=> s abb=on plu=on synth or synthe? or prepartion or produc? or prep
           326 SYNTH
       2222349 SYNTHE?
            19 PREPARTION
             3 PREPARTIONS
            22 PREPARTION
                 (PREPARTION OR PREPARTIONS)
       4566040 PRODUC?
       1026837 PRODN
           533 PRODNS
       1027020 PRODN
                 (PRODN OR PRODNS)
       5060028 PRODUC?
                 (PRODUC? OR PRODN)
        132209 PREP
          2288 PREPS
```

```
        134283 PREP
                 (PREP OR PREPS)
L16    6805049 SYNTH OR SYNTHE? OR PREPARTION OR PRODUC? OR PREP
 95% OF LIMIT FOR TOTAL ANSWERS REACHED

=> d his

     (FILE 'HOME' ENTERED AT 11:48:54 ON 29 AUG 2007)

     FILE 'STNGUIDE' ENTERED AT 11:49:06 ON 29 AUG 2007

     FILE 'HCAPLUS' ENTERED AT 11:50:33 ON 29 AUG 2007
L1             0 SEA ABB=ON PLU=ON  "CYCLOHEXANEDIACETIC ACID"+PFT, OLD, NEW/CT

     FILE 'REGISTRY' ENTERED AT 11:55:02 ON 29 AUG 2007
                E CYCLOHEXANEDIACETIC/CN

     FILE 'HCAPLUS' ENTERED AT 11:55:03 ON 29 AUG 2007
                S E4

     FILE 'REGISTRY' ENTERED AT 11:56:31 ON 29 AUG 2007
L2             1 S E4/CN

     FILE 'HCAPLUS' ENTERED AT 11:56:31 ON 29 AUG 2007
L3             8 S L2
                E CYCLOHEXANEDIACETIC ACID ANHYDRIDE
L4        230564 S ANHYDRIDE
L5             0 S L4 (3W) L3
L6        230564 SEA ABB=ON PLU=ON ANHYDRIDE
L7          1633 S ABB=ON PLU=ON MONOAMIDE
L8         19338 S ABB=ON PLU=ON PRECIPITATION+PFT, OLD, NEW/CT
L9             2 S ABB=ON PLU=ON ACIDIFICATION+PFT, NEW, OLD/CT
L10       214418 S ABB=ON PLU=ON AMMONIA
L11            0 S "HYDROCHLORIC ACID"+PFT, OLD, NEW/CT
                E HYDROCHLORIC ACID
L12           12 S E5
L13            0 S ABB=ON PLU=ON "ACETIC ANHDRIDE"+PFT, NEW, OLD/CT
                E ACETIC ANHYDRIDE
L14       247054 S ACETIC
L15        26509 S L14 (1W) L4
L16      6805049 S ABB=ON PLU=ON SYNTH OR SYNTHE? OR PREPARTION OR PRODUC? OR PR

=> s abb=on plu=on amination=pft, old, new/ct
NUMERIC VALUE NOT VALID 'PFT, OLD, NEW'
Numeric values may contain 1-8 significant figures.  If range notation
is used, both the beginning and the end of the range must be
specified, e.g., '250-300/MW'.  Expressions such as '250-/MW' are not
allowed.  To search for values above or below a given number, use the
>, =>, <, or <= operators, e.g., 'MW => 250'.  Text terms cannot be
used in numeric expressions.  If you specify a unit, it must be
dimensionally correct for that field code.  To see the unit
designations for field codes in the current file, enter "DISPLAY UNIT
ALL" at an arrow prompt (=>).

=> s abb=on plu=on amination+pft, old, new, rt/ct
L17      157279 AMINATION+PFT, OLD, NEW, RT/CT  (6 TERMS)

=> e us4024175/pn
E1             1     US4024173/PN
```

```
E2            1      US4024174/PN
E3            1 --> US4024175/PN
E4            1      US4024176/PN
E5            1      US4024177/PN
E6            1      US4024178/PN
E7            1      US4024179/PN
E8            1      US4024181/PN
E9            1      US4024182/PN
E10           2      US4024183/PN
E11           2      US4024185/PN
E12           1      US4024186/PN

=> s e3
L18           1 US4024175/PN

=> select rn l1 1
L1 HAS NO ANSWERS
An L-number has no answers for one of five reasons:
1. It is a query that has not been searched, or
2. It is the result of a search with zero answers, or
3. It is an intermediate result of the ACTIVATE command, or
4. It is an intermediate result in SEARCH STEPS, or
5. It is an L-number created by the RUN command

=> select rn l18 1
E1 THROUGH E11 ASSIGNED

=> file reg
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                 ENTRY    SESSION
FULL ESTIMATED COST                             149.60     179.18

FILE 'REGISTRY' ENTERED AT 12:26:48 ON 29 AUG 2007
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provided by InfoChem.

STRUCTURE FILE UPDATES:   28 AUG 2007  HIGHEST RN 945714-55-6
DICTIONARY FILE UPDATES:  28 AUG 2007  HIGHEST RN 945714-55-6

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH June 29, 2007

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=> s e1-e11
             1 1010-26-0/BI
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                (1010-26-0/RN)
             1 4432-19-3/BI
                (4432-19-3/RN)
             1 5662-95-3/BI
                (5662-95-3/RN)
             1 60142-94-1/BI
                (60142-94-1/RN)
             1 60142-95-2/BI
                (60142-95-2/RN)
             1 60142-96-3/BI
                (60142-96-3/RN)
             1 60142-97-4/BI
                (60142-97-4/RN)
             1 60142-98-5/BI
                (60142-98-5/RN)
             1 60142-99-6/BI
                (60142-99-6/RN)
             1 60143-00-2/BI
                (60143-00-2/RN)
             1 60175-04-4/BI
                (60175-04-4/RN)
L19         11 (1010-26-0/BI OR 4432-19-3/BI OR 5662-95-3/BI OR 60142-94-1/BI
               OR 60142-95-2/BI OR 60142-96-3/BI OR 60142-97-4/BI OR 60142-98-5
              /BI OR 60142-99-6/BI OR 60143-00-2/BI OR 60175-04-4/BI)

=> d scn

L19  ANSWER 1 OF 11  REGISTRY  COPYRIGHT 2007 ACS on STN
CN   Cyclohexaneacetic acid, 1-(aminomethyl)-, ethyl ester, hydrochloride (9CI)
     (CA INDEX NAME)


=> d scan

L19  11 ANSWERS   REGISTRY  COPYRIGHT 2007 ACS on STN
IN   1,1-Cyclohexanediacetic acid, monomethyl ester (9CI)
MF   C11 H18 O4
CI   COM
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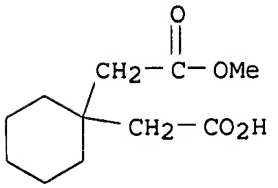


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**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**


HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):11

L19  11 ANSWERS   REGISTRY  COPYRIGHT 2007 ACS on STN
IN   3-Oxaspiro[5.6]dodecane-2,4-dione (9CI)
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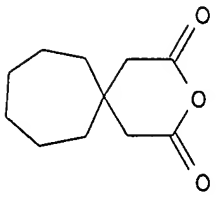
MF C11 H16 O3



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L19 11 ANSWERS REGISTRY COPYRIGHT 2007 ACS on STN
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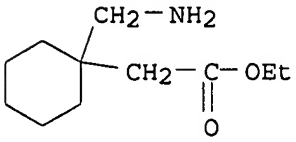
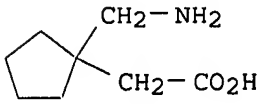


● HCl

L19 11 ANSWERS REGISTRY COPYRIGHT 2007 ACS on STN
IN Cyclopentaneacetic acid, 1-(aminomethyl)- (9CI)
MF C8 H15 N O2
CI COM



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L19 11 ANSWERS REGISTRY COPYRIGHT 2007 ACS on STN
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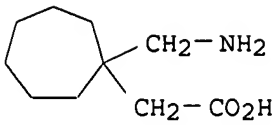
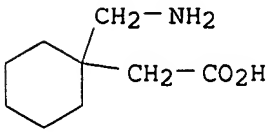
MF C10 H19 N O2 . Cl H



● HCl

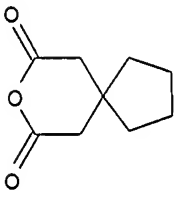
L19 11 ANSWERS REGISTRY COPYRIGHT 2007 ACS on STN
IN Cyclohexaneacetic acid, 1-(aminomethyl)-, hydrochloride (1:1)
MF C9 H17 N O2 . Cl H



● HCl

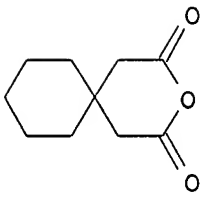
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L19 11 ANSWERS REGISTRY COPYRIGHT 2007 ACS on STN
IN 8-Oxaspiro[4.5]decane-7,9-dione
MF C9 H12 O3
CI COM



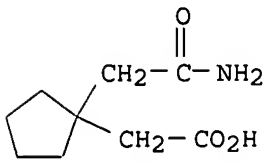
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L19 11 ANSWERS REGISTRY COPYRIGHT 2007 ACS on STN
IN 3-Oxaspiro[5.5]undecane-2,4-dione (9CI)
MF C10 H14 O3



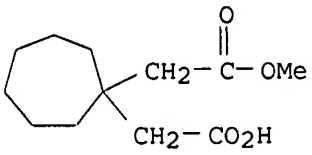
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L19 11 ANSWERS REGISTRY COPYRIGHT 2007 ACS on STN
IN Cyclopentaneacetic acid, 1-(2-amino-2-oxoethyl)- (9CI)
MF C9 H15 N O3



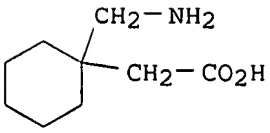
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L19 11 ANSWERS REGISTRY COPYRIGHT 2007 ACS on STN
IN 1,1-Cycloheptanediacetic acid, monomethyl ester (9CI)
MF C12 H20 O4



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L19 11 ANSWERS REGISTRY COPYRIGHT 2007 ACS on STN
IN Cyclohexaneacetic acid, 1-(aminomethyl)-
MF C9 H17 N O2
CI COM



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

ALL ANSWERS HAVE BEEN SCANNED

=> d his

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     (FILE 'HOME' ENTERED AT 11:48:54 ON 29 AUG 2007)

     FILE 'STNGUIDE' ENTERED AT 11:49:06 ON 29 AUG 2007

     FILE 'HCAPLUS' ENTERED AT 11:50:33 ON 29 AUG 2007
L1             0 SEA ABB=ON PLU=ON  "CYCLOHEXANEDIACETIC ACID"+PFT, OLD, NEW/CT

     FILE 'REGISTRY' ENTERED AT 11:55:02 ON 29 AUG 2007
                E CYCLOHEXANEDIACETIC/CN

     FILE 'HCAPLUS' ENTERED AT 11:55:03 ON 29 AUG 2007
                S E4

     FILE 'REGISTRY' ENTERED AT 11:56:31 ON 29 AUG 2007
L2             1 S E4/CN

     FILE 'HCAPLUS' ENTERED AT 11:56:31 ON 29 AUG 2007
L3             8 S L2
                E CYCLOHEXANEDIACETIC ACID ANHYDRIDE
L4        230564 S ANHYDRIDE
L5             0 S L4 (3W) L3
L6        230564 SEA ABB=ON PLU=ON ANHYDRIDE
L7          1633 S ABB=ON PLU=ON MONOAMIDE
L8         19338 S ABB=ON PLU=ON PRECIPITATION+PFT, OLD, NEW/CT
L9             2 S ABB=ON PLU=ON ACIDIFICATION+PFT, NEW, OLD/CT
L10       214418 S ABB=ON PLU=ON AMMONIA
L11            0 S "HYDROCHLORIC ACID"+PFT, OLD, NEW/CT
                E HYDROCHLORIC ACID
L12           12 S E5
L13            0 S ABB=ON PLU=ON "ACETIC ANHDRIDE"+PFT, NEW, OLD/CT
                E ACETIC ANHYDRIDE
L14       247054 S ACETIC
L15        26509 S L14 (1W) L4
L16      6805049 S ABB=ON PLU=ON SYNTH OR SYNTHE? OR PREPARTION OR PRODUC? OR PR
L17       157279 S ABB=ON PLU=ON AMINATION+PFT, OLD, NEW, RT/CT
                E US4024175/PN
L18            1 S E3
                SELECT RN L18 1

     FILE 'REGISTRY' ENTERED AT 12:26:48 ON 29 AUG 2007
L19           11 S E1-E11
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=> s (1,1-cyclohexanediacetic acid)+rtcs, new, old/ct
MISSING OPERATOR

=> s abb=on plu=on "1,1-cyclohexanediacetic acid"+rtcs, new, old/ct
'CT' IS NOT A VALID FIELD CODE
L20           0 "1,1-CYCLOHEXANEDIACETIC ACID"+RTCS, NEW, OLD/CT

=> s abb=on plu=on gabapentine+rtcs, new, old, pft/ct
'CT' IS NOT A VALID FIELD CODE
L21           0 GABAPENTINE+RTCS, NEW, OLD, PFT/CT

=> s gabapentin
L22           7 GABAPENTIN

=> s l22 and l2
L23           0 L22 AND L2

=> s l22 and l3
L24           0 L22 AND L3

=> file hcaplus
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                   ENTRY    SESSION
FULL ESTIMATED COST                               17.25     196.43

FILE 'HCAPLUS' ENTERED AT 12:40:47 ON 29 AUG 2007
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FILE COVERS 1907 - 29 Aug 2007  VOL 147 ISS 10
FILE LAST UPDATED: 28 Aug 2007  (20070828/ED)

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 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> s gabapentin
          1956 GABAPENTIN
             1 GABAPENTINS
L25       1956 GABAPENTIN
                (GABAPENTIN OR GABAPENTINS)

=> s l25 and l3
L26           0 L25 AND L3

=> d his
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     (FILE 'HOME' ENTERED AT 11:48:54 ON 29 AUG 2007)

     FILE 'STNGUIDE' ENTERED AT 11:49:06 ON 29 AUG 2007

     FILE 'HCAPLUS' ENTERED AT 11:50:33 ON 29 AUG 2007
L1             0 SEA ABB=ON PLU=ON  "CYCLOHEXANEDIACETIC ACID"+PFT, OLD, NEW/CT

     FILE 'REGISTRY' ENTERED AT 11:55:02 ON 29 AUG 2007
                E CYCLOHEXANEDIACETIC/CN

     FILE 'HCAPLUS' ENTERED AT 11:55:03 ON 29 AUG 2007
                S E4

     FILE 'REGISTRY' ENTERED AT 11:56:31 ON 29 AUG 2007
L2             1 S E4/CN

     FILE 'HCAPLUS' ENTERED AT 11:56:31 ON 29 AUG 2007
L3             8 S L2
                E CYCLOHEXANEDIACETIC ACID ANHYDRIDE
L4        230564 S ANHYDRIDE
L5             0 S L4 (3W) L3
L6        230564 SEA ABB=ON PLU=ON ANHYDRIDE
L7          1633 S ABB=ON PLU=ON MONOAMIDE
L8         19338 S ABB=ON PLU=ON PRECIPITATION+PFT, OLD, NEW/CT
L9             2 S ABB=ON PLU=ON ACIDIFICATION+PFT, NEW, OLD/CT
L10       214418 S ABB=ON PLU=ON AMMONIA
L11            0 S "HYDROCHLORIC ACID"+PFT, OLD, NEW/CT
                E HYDROCHLORIC ACID
L12           12 S E5
L13            0 S ABB=ON PLU=ON "ACETIC ANHDRIDE"+PFT, NEW, OLD/CT
                E ACETIC ANHYDRIDE
L14       247054 S ACETIC
L15        26509 S L14 (1W) L4
L16      6805049 S ABB=ON PLU=ON SYNTH OR SYNTHE? OR PREPARTION OR PRODUC? OR PR
L17       157279 S ABB=ON PLU=ON AMINATION+PFT, OLD, NEW, RT/CT
                E US4024175/PN
L18            1 S E3
                SELECT RN L18 1

     FILE 'REGISTRY' ENTERED AT 12:26:48 ON 29 AUG 2007
L19           11 S E1-E11
L20            0 S ABB=ON PLU=ON "1,1-CYCLOHEXANEDIACETIC ACID"+RTCS, NEW, OLD/C
L21            0 S ABB=ON PLU=ON GABAPENTINE+RTCS, NEW, OLD, PFT/CT
L22            7 S GABAPENTIN
L23            0 S L22 AND L2
L24            0 S L22 AND L3

     FILE 'HCAPLUS' ENTERED AT 12:40:47 ON 29 AUG 2007
L25         1956 S GABAPENTIN
L26            0 S L25 AND L3

=> s l25 and l6
L27           20 L25 AND L6

=> s l27 and l7
L28            4 L27 AND L7

=> d l28 ibib abs
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L28 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:1026923 HCAPLUS
DOCUMENT NUMBER: 143:286690
TITLE: Synthesis of 4-tert-butylgabapentin
INVENTOR(S): Kuppuswamy, Nagarajan; Hariharan, Sivaramakrishnan; Iyer, Venkatachalam Shankar; Balakrishnan, Suresh Babu; Krishnamurthi, Gopalakrishnan; Kuppana, Ananda; Karuppiah, Muruga Poopati Raja; Padmanabhan, Balaram; Subrayashastry, Aravinda; Prema, Gouriamma Vasudev; Narayanaswamy, Shamala
PATENT ASSIGNEE(S): Hikal Limited, India; Indian Institute of Science
SOURCE: PCT Int. Appl., 17 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005087709	A1	20050922	WO 2005-IN82	20050316
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2570255	A1	20050922	CA 2005-2570255	20050316
EP 1763503	A1	20070321	EP 2005-732985	20050316
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				

PRIORITY APPLN. INFO.: US 2004-553565P P 20040317
WO 2005-IN82 W 20050316

AB The invention relates to a process for the preparation of the cis (Z) and trans (E) stereoisomers of 4-tert-butylgabapentin. 4-Tert-butylgabapentin as a mixture of stereoisomers was prepared by treating 4-tert-butylcyclohexanone with Et cyanoacetate and ammonia in methanol, hydrolysis of the dicyano imide product with hot sulfuric acid, conversion to the anhydride , treatment with aqueous ammonia to give the monoamide as a mixture of approx. equal proportions of stereoisomers, reaction with NaOBr to form the lactam, hydrolysis of the lactam with hot concentrated HCl, and neutralization with aqueous NaOH to pH 7. The stereoisomers of 4-tert-butylgabapentin were separated by fractional crystallization from aqueous methanol.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l28 2-4 ibib abs

L28 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:1026620 HCAPLUS
DOCUMENT NUMBER: 143:267241

TITLE: Preparation of gabapentin analogues
INVENTOR(S): Kuppuswamy, Nagarajan; Hariharan, Sivaramakrishnan; Iyer, Venkatachalam Sankar; Balakrishnan, Suresh Babu; Krishnamurthi, Gopalakrishnan; Kuppanna, Ananda; Karuppiah, Muruga Poopati Raja; Padmanabhan, Balaram; Subrayashastry, Aravinda; Prema, Gouriamma Vasudev; Narayanaswamy, Shamala
PATENT ASSIGNEE(S): Hikal Limited, India; Indian Institute of Science
SOURCE: U.S. Pat. Appl. Publ., 6 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005209332	A1	20050922	US 2005-79481	20050315
US 2007123591	A1	20070531	US 2006-583953	20061020
PRIORITY APPLN. INFO.:			US 2004-553565P	P 20040317
			US 2005-79481	A2 20050315

OTHER SOURCE(S): CASREACT 143:267241
AB The invention relates to a process for the preparation of the cis (Z) and trans (E) stereoisomers of 4-tert-butylgabapentin. 4-Tert-butylgabapentin as a mixture of stereoisomers was prepared by treating 4-tert-butylcyclohexanone with Et cyanoacetate and ammonia in methanol, hydrolysis of the dicyano imide product with hot sulfuric acid, conversion to the anhydride , treatment with aqueous ammonia to give the monoamide as a mixture of approx. equal proportions of stereoisomers, reaction with NaOBr to form the lactam, hydrolysis of the lactam with hot concentrated HCl, and neutralization with aqueous NaOH to pH 7. The stereoisomers of 4-tert-butylgabapentin were separated by fractional crystallization from aqueous methanol.

L28 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:426561 HCAPLUS
DOCUMENT NUMBER: 142:463372
TITLE: Process for the preparation of gabapentin via the Hoffmann rearrangement of 1,1-cyclohexanediacetic acid monoamide
INVENTOR(S): Arrighi, Katiuscia; Cannata, Vincenzo; Corcella, Francesco; Marchioro, Gaetano; Nicoli, Andrea; Paiocchi, Maurizio; Villa, Marco
PATENT ASSIGNEE(S): Zambon Group S.p.A., Italy
SOURCE: PCT Int. Appl., 11 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005044779	A2	20050519	WO 2004-EP52894	20041109
WO 2005044779	A3	20050714		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,

NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
NE, SN, TD, TG

CA 2543275	A1	20050519	CA 2004-2543275		20041109
EP 1682488	A2	20060726	EP 2004-804523		20041109
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, TR, BG, CZ, EE, HU, PL, SK, HR, IS, YU					
JP 2007510695	T	20070426	JP 2006-538854		20041109
IN 2006CN01621	A	20070608	IN 2006-CN1621		20060510
US 2007066843	A1	20070322	US 2006-578783		20061206
PRIORITY APPLN. INFO.:			IT 2003-MI2165	A	20031111
			WO 2004-EP52894	W	20041109

OTHER SOURCE(S): CASREACT 142:463372

AB Gabapentin and its salts (e.g., gabapentin hydrochloride) are prepared by the Hoffmann rearrangement of 1,1-cyclohexanediacetic acid monoamide, prepared by the monoamidation of 1,1-cyclohexanediacetic anhydride with aqueous ammonia, optionally followed by salification in the case of required salt formation.

L28 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:22835 HCAPLUS
DOCUMENT NUMBER: 138:73019
TITLE: Amidation process for the preparation of 1,1-cyclohexanediacetic acid monoamide from 1,1-cyclohexanediacetic anhydride and aqueous ammonia
INVENTOR(S): Oren, Jacob
PATENT ASSIGNEE(S): Bromine Compounds Ltd., Israel
SOURCE: PCT Int. Appl., 15 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2003002517	A1	20030109	WO 2002-IL473		20020617
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW					
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
AU 2002311607	A1	20030303	AU 2002-311607		20020617
PRIORITY APPLN. INFO.:			IL 2001-144066	A	20010628
			WO 2002-IL473	W	20020617

OTHER SOURCE(S): CASREACT 138:73019

AB 1,1-Cyclohexanediacetic acid monoamide (CHDAAM), a gabapentin intermediate (no data), is prepared in high yield and

selectivity by amination of 1,1-cyclohexanediacetic anhydride (CDAAn) with aqueous ammonia, followed by neutralization of the reaction mixture with an acid (e.g., H2SO4) such that crude CHDAAM is precipitated, filtered, and purified by crystallization from a solvent. The amination is carried out at <20° with aqueous ammonia having a concentration of 25-35% and in a molar ratio, relative to the CHDAAn, of 5-10, resp. The neutralization is carried out with an aqueous solution of H2SO4 having a concentration of 30-70% and is continued until a slightly acid solution is obtained.
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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=> s 1,1-cyclohexanediacetic acid
       9264151 1
       9264151 1
           249 CYCLOHEXANEDIACETIC
       4427414 ACID
       1588937 ACIDS
       4929386 ACID
                 (ACID OR ACIDS)
L29          99 1,1-CYCLOHEXANEDIACETIC ACID
                 (1(W)1(W)CYCLOHEXANEDIACETIC(W)ACID)

=> d his

     (FILE 'HOME' ENTERED AT 11:48:54 ON 29 AUG 2007)

     FILE 'STNGUIDE' ENTERED AT 11:49:06 ON 29 AUG 2007

     FILE 'HCAPLUS' ENTERED AT 11:50:33 ON 29 AUG 2007
L1             0 SEA ABB=ON PLU=ON  "CYCLOHEXANEDIACETIC ACID"+PFT, OLD, NEW/CT

     FILE 'REGISTRY' ENTERED AT 11:55:02 ON 29 AUG 2007
                 E CYCLOHEXANEDIACETIC/CN

     FILE 'HCAPLUS' ENTERED AT 11:55:03 ON 29 AUG 2007
                 S E4

     FILE 'REGISTRY' ENTERED AT 11:56:31 ON 29 AUG 2007
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     FILE 'HCAPLUS' ENTERED AT 11:56:31 ON 29 AUG 2007
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L4        230564 S ANHYDRIDE
L5             0 S L4 (3W) L3
L6        230564 SEA ABB=ON PLU=ON ANHYDRIDE
L7          1633 S ABB=ON PLU=ON MONOAMIDE
L8         19338 S ABB=ON PLU=ON PRECIPITATION+PFT, OLD, NEW/CT
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L10       214418 S ABB=ON PLU=ON AMMONIA
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L16      6805049 S ABB=ON PLU=ON SYNTH OR SYNTHE? OR PREPARTION OR PRODUC? OR PR
L17       157279 S ABB=ON PLU=ON AMINATION+PFT, OLD, NEW, RT/CT
                 E US4024175/PN
L18            1 S E3
                 SELECT RN L18 1

     FILE 'REGISTRY' ENTERED AT 12:26:48 ON 29 AUG 2007
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L22            7 S GABAPENTIN
L23            0 S L22 AND L2
L24            0 S L22 AND L3

     FILE 'HCAPLUS' ENTERED AT 12:40:47 ON 29 AUG 2007
L25         1956 S GABAPENTIN
L26            0 S L25 AND L3
L27           20 S L25 AND L6
L28            4 S L27 AND L7
L29           99 S 1,1-CYCLOHEXANEDIACETIC ACID

=> s l29 (3w) l6
L30            4 L29 (3W) L6

=> s l30 not l28
L31            3 L30 NOT L28

=> d l31 1-3 ibib abs

L31  ANSWER 1 OF 3  HCAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         2001:930766  HCAPLUS
DOCUMENT NUMBER:          136:19880
TITLE:                    Preparation of 1-(2-amino-2-oxoethyl)cyclohexaneacetic
                          acid
INVENTOR(S):              Tang, Miaorong; Fan, Weirong; Liu, Tianchun; Zhang,
                          Xiaobo
PATENT ASSIGNEE(S):       Hangzhou Shouxin Fine Chemical Co., Ltd., Peop. Rep.
                          China
SOURCE:                   Faming Zhuanli Shenqing Gongkai Shuomingshu, 5 pp.
                          CODEN: CNXXEV
DOCUMENT TYPE:            Patent
LANGUAGE:                 Chinese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.         DATE
     --------------       ----   --------    --------------------    --------
     CN 1297885            A     20010606    CN 2000-128111          20001201
     CN 1109017            B     20030521
PRIORITY APPLN. INFO.:                       CN 2000-128111          20001201
OTHER SOURCE(S):          CASREACT 136:19880
AB   1-(2-Amino-2-oxoethyl)cyclohexaneacetic acid is synthesized by condensing
     cyclohexanone with Et cyanoacetate in ethanol under bubbling NH3 for 18-26
     h, stirring at 0° for 18-26 h and at 25° for 100-130 h to
     obtain α,α-dicyano-1,1-cyclohexanediacetimide ammonium salt,
     hydrolyzing with H2SO4 solution at 200° for 30 min to obtain 1
     ,1-cyclohexanediacetic acid, dehydrating
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with acetic anhydride to obtain 1,1-cyclohexanediacetic anhydride, aminolyzing with NH3 or NH4OH at 30-110° for 3-8 h, and recrystg. with ethanol.

L31 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1988:186295 HCAPLUS
DOCUMENT NUMBER: 108:186295
TITLE: Studies in the cycloheptane series. Part XXX. Friedel-Crafts reaction of the anhydride of 3,4-dimethylcyclohexane-1,1-diacetic acid with aromatic hydrocarbons and synthesis of 2,3-dimethyl-9,10-benzo-substituted benzospiro[5.6]dodecanes
AUTHOR(S): Gautam, R. K.; Kannan, S.; Saharia, G. S.
CORPORATE SOURCE: Dep. Chem., Univ. Delhi, Delhi, 110007, India
SOURCE: Journal of the Institution of Chemists (India) (1987), 59(2), 95-9
CODEN: JOICA7; ISSN: 0020-3254
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 108:186295
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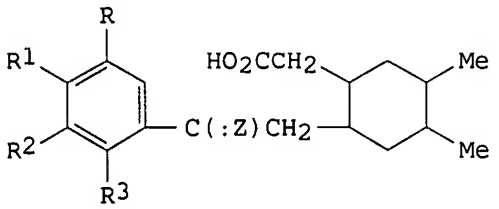

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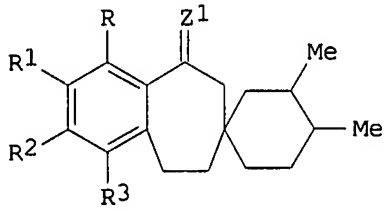

II

AB Friedel-Crafts reaction of 3,4-dimethyl-1,1-cyclohexanediacetic acid anhydride with C6H6, PhMe, o-, m-, and p-xylene, PhCl, PhOMe, and tetralin gave 70-80% aryl ketones I [R = R2 = R3 = H, R1 = H, Me, Cl, MeO; RR1 = (CH2)4, R2 = R3 = H; R = R3 = Me, R1 = R2 = H; R = R3 = H, R1 = R2 = Me; R = R2 = H, R1 = R3 = Me; Z = O]. Clemmensen reduction of I (Z = O) gave I (Z = H2) which were cyclized with polyphosphoric acid to give 60-70% benzospiro[5.6]dodecanes II (same R-R3; Z1 = O). Clemmensen reduction of II (Z1 = O) gave II (Z1 = H2).

L31 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1963:66337 HCAPLUS
DOCUMENT NUMBER: 58:66337
ORIGINAL REFERENCE NO.: 58:11294d-h,11295a-e

TITLE: Catalytic dehydrogenation. VIII. Synthesis and dehydrogenation of spiro[6.5]dodecanes
AUTHOR(S): Sen Gupta, S. C.; Sen, Parimal Krishna
CORPORATE SOURCE: Ramakrishna Mission Vidyamandir, Belur Math, India
SOURCE: J. Indian Chem. Soc. (1962), 39, 815-22
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
GI For diagram(s), see printed CA Issue.
AB cf. ibid. 660; CA 50, 3364h. The synthesis of Ia (R2 = R3 = H) (I, R = R1 = H) and its alkyl derivs. were described. Ia when heated with Pd-C at 370-400° in a sealed tube underwent dehydrogenation accompanied by ring transformation, providing an anthracene or a phenanthrene as the main product. By the method of Ali, et al. (CA 31, 62187), were prepared IIa [(R2R3 =)O] (II, R = R1 = H) and IIa (R2 = R3 = H) (III, R = R1 = H), b1 188°, m. 57-8° (hexane). III (R = R1 = H) (10 g.) and polyphosphoric acid (PPA) (from 60 g. P2O5 and 60 ml. 89% H3PO4) heated and stirred 1.5 hrs. on a steam bath, poured on crushed ice, and the product isolated with Et2O gave 6.5 g. Ia [(R2R3 =)O] (IV R = R1 = H), b1 166-8°, m. 58° (hexane); 2,4-dinitrophenylhydrazone m. 226° (EtOAc). IV (R = R1 = H) (9 g.) gently boiled 24 hrs. with 40 g. amalgamated Zn and 40 ml. concentrated HCl and the product isolated with Et2O gave 6 g. I (R = R1 = H) (IVa), b1 152-3°, d32 0.9986, n32D 1.5445. IVa (2.51 g.) heated 18 hrs. at 380-400° with 0.28 g. 10% Pd-C in a sealed tube, the product isolated with Et2O, and chromatographed on Al2O3 with hexane gave initially o-xylene, b. 140-5°, oxidized by alkaline KMnO4 to o-C6H4(CO2H)2 (IVb), m. 200° (decomposition) (anhydride m. 130°). Later fractions gave anthracene (V) isolated via the trinitrobenzene (VI) complex. From 14 g. 1,1-cyclohexanediacetic acid anhydride (VII), 70 ml. PhMe, and 27 g. AlCl3 was prepared as above 21 g. II (R = Me, R1 = H) (VIIa), m. 87-8° (EtOH, then hexane); semicarbazone m. 200° (decomposition) (EtOH). VIIa heated with alkaline KMnO4 solution gave p-C6H4(CO2H)2 (VIII); di-Me ester (IX) m. 140°. VIIa (25 g.) heated 24 hrs. with 100 g. amalgamated Zn and 100 ml. concentrated HCl gave 12 g. III (R = Me, R1 = H) (VIIIa), b1 192-4°. VIIIa (8 g.) cyclized with PPA (from 60 g. P2O5 and 40 ml. 89% H3PO4) as above gave IV (R = Me, R1 = H) (VIIIb), b1 178°, m. 60-1°; 2,4-dinitrophenylhydrazone m. 216-17° (EtOAc). VIIIb (6 g.) heated 24 hrs. with 30 g. amalgamated Zn and 30 ml. concentrated HCl gave 4 g. I (R = Me, R = H) (VIIIc), b1 173-5°, d32 1.0, n32D 1.543. VIIIc (1.77 g.) and 0.2 g. 10% Pd-C heated 16 hrs. at 380-400° in a sealed tube, the product chromatographed on Al2O3 with hexane as above, and the combined oils from the 1st and 2nd eluates distilled gave 1,2,4-C6H3Me3, oxidized by alkaline KMnO4 solution to 1,2,4-C6H3(CO2H)3, m. 216° (decomposition); the 3rd and 4th eluates concentrated, each residual solid (small amts.) treated with VI, and the combined complexes (m. 124-30°) crystallized repeatedly from EtOH gave VI complex of 2-methylanthracene (X), m. 130°, from which was regenerated X, m. 201° (EtOH). VII (15 g.) in 20 ml. PhEt added to 25 g. anhydrous AlCl3 suspended in 75 ml. ice cold dry (Cl2CH)2 and worked up as above gave 10 g. II (R = Et, R1 = H), b0.8 210-12° [semicarbazone, m. 182-3° (decomposition) (EtOH)], oxidized with alkaline KMnO4 solution to VIII, and heated (55 g.) 30 hrs. with 200 g. amalgamated Zn and 200 ml. concentrated HCl to 38 g. III (R = Et, R1 = H) (Xa), b1, 210°. Xa (8.1 g.) cyclized with PPA (from 35 g. P2O5 and 15 ml. 89% H3PO4 as above gave 4.19 g. IV (R = Et, R1 = H), b1 185-7° [semicarbazone, m. 222° (decomposition) (EtOH)], which (10 g.) heated 30 hrs. with 40 g. amalgamated Zn and 40 ml. concentrated HCl gave 7 g. I (R = Et,

R1 = H) (Xb), b1 165-7°, d32 0.9947, n32D 1.541. Xb (2.45 g.) and 0.25 g. 10% Pd-C heated 16 hrs. at 380-400° in a sealed tube and the product chromatographed on Al2O3 with hexane as above gave (from the 1st and 2nd eluates) traces unchanged Xb; the 3rd and 4th eluates concentrated, each residual oil treated with VI, and the combined complexes (m. 110-18°) crystallized repeatedly from EtOH gave V complex of 2-ethylanthracene (XI), m. 119-20°, from which was regenerated XI, m. 150-1°. From 48 g. 4-methyl-1,1-cyclohexanediacetic acid anhydride, 150 ml. dry C6H5, and 70 g. AlCl3 was prepared 12 g. II (R = H, R1 = Me) (XIa), m. 113° (EtOH, then hexane); from the EtOH mother liquor was isolated 20 g. stereoisomer (XII) of II (R = H, R1 = Me), viscous mass, b1 200-5°. XII (17 g.) heated 36 hrs. with 75 g. amalgamated Zn and 75 ml. concentrated HCl gave 10 g. III (R = H, R1 = Me), b1 183-5°, cyclized with PPA (from 30 g. P2O5 and 15 ml. 89% H3PO4) to 6.5 g. IV (R = H, R1 = Me) (XIIa), b1 162-3°; 2,4-dinitrophenylhydrazone, m. 218-19° (EtOAc). XIa reduced with amalgamated Zn and concentrated HCl and the resulting product cyclized with PPA gave XIIa. XIIa (10 g.) gently boiled 24 hrs. with 40 g. amalgamated Zn and 40 ml. concentrated HCl gave 5.9 g. I (R = H, R1 = Me), b1 150-1°, d30 1.0128, n30D 1.5410, which (2.7 g.) and 0.29 g. 10% Pd-C heated 16 hrs. at 380-400° in a sealed tube and the product chromatographed on Al2O3 with hexane gave (from the 1st, 2nd, and 3rd eluates) o-xylene, b. .apprx.145°, oxidized by alkaline KMnO4 solution to IVb; the 4th, 5th, and 6th eluates concentrated, each residual oil (containing very little solid) treated with VI, and the combined complexes (m. 148-55°) crystallized repeatedly from EtOH gave VI complex of 3-methylphenanthrene (XIII), m. 155°, from which was regenerated XIII, m. 62-3° (EtOH) [picrate, m. 140-1° (EtOH)].

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(FILE 'HOME' ENTERED AT 11:48:54 ON 29 AUG 2007)

FILE 'STNGUIDE' ENTERED AT 11:49:06 ON 29 AUG 2007

FILE 'HCAPLUS' ENTERED AT 11:50:33 ON 29 AUG 2007
L1 0 SEA ABB=ON PLU=ON "CYCLOHEXANEDIACETIC ACID"+PFT, OLD, NEW/CT

FILE 'REGISTRY' ENTERED AT 11:55:02 ON 29 AUG 2007
E CYCLOHEXANEDIACETIC/CN

FILE 'HCAPLUS' ENTERED AT 11:55:03 ON 29 AUG 2007
S E4

FILE 'REGISTRY' ENTERED AT 11:56:31 ON 29 AUG 2007
L2 1 S E4/CN

FILE 'HCAPLUS' ENTERED AT 11:56:31 ON 29 AUG 2007
L3 8 S L2
E CYCLOHEXANEDIACETIC ACID ANHYDRIDE
L4 230564 S ANHYDRIDE
L5 0 S L4 (3W) L3
L6 230564 SEA ABB=ON PLU=ON ANHYDRIDE
L7 1633 S ABB=ON PLU=ON MONOAMIDE
L8 19338 S ABB=ON PLU=ON PRECIPITATION+PFT, OLD, NEW/CT

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L9            2 S ABB=ON PLU=ON ACIDIFICATION+PFT, NEW, OLD/CT
L10      214418 S ABB=ON PLU=ON AMMONIA
L11           0 S "HYDROCHLORIC ACID"+PFT, OLD, NEW/CT
                E HYDROCHLORIC ACID
L12          12 S E5
L13           0 S ABB=ON PLU=ON "ACETIC ANHDRIDE"+PFT, NEW, OLD/CT
                E ACETIC ANHYDRIDE
L14      247054 S ACETIC
L15       26509 S L14 (1W) L4
L16     6805049 S ABB=ON PLU=ON SYNTH OR SYNTHE? OR PREPARTION OR PRODUC? OR PR
L17      157279 S ABB=ON PLU=ON AMINATION+PFT, OLD, NEW, RT/CT
                E US4024175/PN
L18           1 S E3
                SELECT RN L18 1

     FILE 'REGISTRY' ENTERED AT 12:26:48 ON 29 AUG 2007
L19          11 S E1-E11
L20           0 S ABB=ON PLU=ON "1,1-CYCLOHEXANEDIACETIC ACID"+RTCS, NEW, OLD/C
L21           0 S ABB=ON PLU=ON GABAPENTINE+RTCS, NEW, OLD, PFT/CT
L22           7 S GABAPENTIN
L23           0 S L22 AND L2
L24           0 S L22 AND L3

     FILE 'HCAPLUS' ENTERED AT 12:40:47 ON 29 AUG 2007
L25        1956 S GABAPENTIN
L26           0 S L25 AND L3
L27          20 S L25 AND L6
L28           4 S L27 AND L7
L29          99 S 1,1-CYCLOHEXANEDIACETIC ACID
L30           4 S L29 (3W) L6
L31           3 S L30 NOT L28

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L32           2 L29 AND L17 NOT L28

=> d l32 1-2 ibib abs

L32  ANSWER 1 OF 2  HCAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         2003:678769  HCAPLUS
DOCUMENT NUMBER:          139:197197
TITLE:                    Preparation of new mineral acid addition salts of
                          gabapentin
INVENTOR(S):              Vittal, Tangirala Venkata Subramanya Krishna; Taj,
                          Shabbir Ali; Kodimuthali, Armugam; Maddali, Kasturaiah
PATENT ASSIGNEE(S):       Shasun Chemicals and Drugs Limited, India
SOURCE:                   PCT Int. Appl., 18 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.        DATE
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     WO 2003070683         A1    20030828    WO 2002-IN29           20020222
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
             HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
             LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO,
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RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2002246303 A1 20030909 AU 2002-246303 20020222
PRIORITY APPLN. INFO.: WO 2002-IN29 A 20020222
OTHER SOURCE(S): CASREACT 139:197197

AB A process for preparing mineral acid addition salts of gabapentin (e.g., gabapentin dihydrogen phosphate) comprises: (a) treating 1, 1-cyclohexanediacetic acid monoamide with sodium hypobromite to effect a decarbonylation; (b) acidifying the reaction mass with a mineral acid (e.g., phosphoric acid) to a pH of about 2; (c) extracting the acid addition salt with a ketone solvent (e.g., MEK); (d) evaporating the solvent; (e) dissolving the extract in an alc. solvent (e.g., isopropanol); (f) filtering the undissolved material and evaporating the alc. solvent to obtain a syrupy residue; and (g) mixing the residue with non-polar organic solvents (e.g., toluene) to obtain mineral acid addition salts of gabapentin.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:511296 HCAPLUS
DOCUMENT NUMBER: 139:85334
TITLE: Preparation of benzyl cyclic amines such as benzylpiperidine derivatives as serotonin reuptake inhibitors
INVENTOR(S): Kodo, Toru; Yagi, Hideki; Dan, Akihito; Masumoto, Shuji; Kinomura, Naoya; Koyama, Koji
PATENT ASSIGNEE(S): Sumitomo Pharmaceuticals Co., Ltd., Japan
SOURCE: PCT Int. Appl., 186 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003053928	A1	20030703	WO 2002-JP13043	20021212
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002366766	A1	20030709	AU 2002-366766	20021212
EP 1466901	A1	20041013	EP 2002-790747	20021212
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
US 2005065140	A1	20050324	US 2004-498482	20040816
PRIORITY APPLN. INFO.:			JP 2001-379598 A	20011213

JP 2001-399453 A 20011228
JP 2002-7140 A 20020116
WO 2002-JP13043 W 20021212

OTHER SOURCE(S): MARPAT 139:85334

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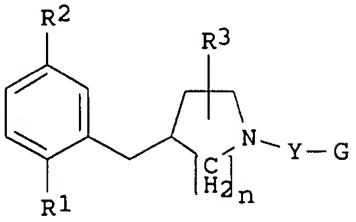

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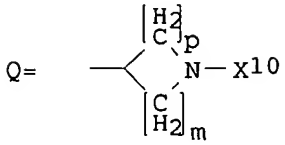

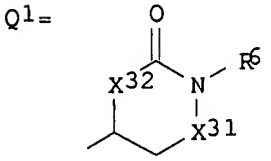

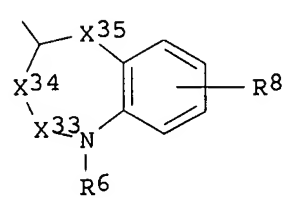

AB Disclosed is a serotonin reuptake inhibitor which contains as an active ingredient a cyclic amine represented by the formula (I) [wherein G = Q, -Z2-X20, Z3; R2 = H, halo, HO, each (un)substituted alkyl, alkoxy, or alkylthio; R3 = H, lower alkyl; Y = (un)substituted alkylene; n = 1,2,3; m = 0, 1,2,3; p = 1,2,3,4; wherein X10 = H, cycloalkyl, each (un)substituted alkyl, alkanoyl, alkanesulfonyl, alkylcarbamoyl, alkylsulfamoyl, alkoxycarbonyl, or amidino; X20 = HO, carbamoyloxy, each (un)substituted alkyl, NH2, alkoxy, or alkylcarbamoyloxy; Z2 = cycloalkane ring; Z3 = Q1, Q2; wherein X31 = a bond, CH2, CO; X32 = O, S, alkyl-(un)substituted NH; R6 = H, (un)substituted alkyl, cycloalkyl, aryl, or heteroaryl; X33 = a single bond, CH2, CO; X34 = a single bond, CH2; X35 = a single bond, CH2, O, S, alkyl-(un)substituted NH; provided that X34 and X35 are not simultaneously a single bond; R6 = H, alkyl; R8 = H, halo, alkyl, HO, (un)substituted alkoxy or alkylcarbamoyloxy], a prodrug thereof, or a pharmaceutically acceptable salt of any of these. The compds. I are selective serotonin reuptake inhibitors having an affinity for a serotonin 1A receptor. Thus, 55 mg triphosgene was added to a solution of 200 mg 3-[4-(2-bromo-5-methoxybenzyl)piperidin-1-yl]-1-cyclohexylaminopropan-2-ol and 0.083 mL Et3N in 5 m THF at room temperature and stirred for 6 h to give 100% 5-[[4-(2-bromo-5-methoxybenzyl)piperidin-1-yl]methyl]-3-cyclohexyloxazolidin-2-one. 2-[[4-(2-Bromo-5-chlorobenzyl)piperidin-1-yl]methyl]-1,2,3,4-tetrahydroquinoline dihydrochloride at 10-5 M increased by 74% the binding of [35S]GTPγS to CHO cell membrane expressing human 5-HT1A in the presence of 10 μM serotonin (5-HT).

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d his

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     (FILE 'HOME' ENTERED AT 11:48:54 ON 29 AUG 2007)

     FILE 'STNGUIDE' ENTERED AT 11:49:06 ON 29 AUG 2007

     FILE 'HCAPLUS' ENTERED AT 11:50:33 ON 29 AUG 2007
L1            0 SEA ABB=ON PLU=ON  "CYCLOHEXANEDIACETIC ACID"+PFT, OLD, NEW/CT

     FILE 'REGISTRY' ENTERED AT 11:55:02 ON 29 AUG 2007
                E CYCLOHEXANEDIACETIC/CN

     FILE 'HCAPLUS' ENTERED AT 11:55:03 ON 29 AUG 2007
                S E4

     FILE 'REGISTRY' ENTERED AT 11:56:31 ON 29 AUG 2007
L2            1 S E4/CN

     FILE 'HCAPLUS' ENTERED AT 11:56:31 ON 29 AUG 2007
L3            8 S L2
                E CYCLOHEXANEDIACETIC ACID ANHYDRIDE
L4       230564 S ANHYDRIDE
L5            0 S L4 (3W) L3
L6       230564 SEA ABB=ON PLU=ON ANHYDRIDE
L7         1633 S ABB=ON PLU=ON MONOAMIDE
L8        19338 S ABB=ON PLU=ON PRECIPITATION+PFT, OLD, NEW/CT
L9            2 S ABB=ON PLU=ON ACIDIFICATION+PFT, NEW, OLD/CT
L10      214418 S ABB=ON PLU=ON AMMONIA
L11           0 S "HYDROCHLORIC ACID"+PFT, OLD, NEW/CT
                E HYDROCHLORIC ACID
L12          12 S E5
L13           0 S ABB=ON PLU=ON "ACETIC ANHDRIDE"+PFT, NEW, OLD/CT
                E ACETIC ANHYDRIDE
L14      247054 S ACETIC
L15       26509 S L14 (1W) L4
L16     6805049 S ABB=ON PLU=ON SYNTH OR SYNTHE? OR PREPARTION OR PRODUC? OR PR
L17      157279 S ABB=ON PLU=ON AMINATION+PFT, OLD, NEW, RT/CT
                E US4024175/PN
L18           1 S E3
                SELECT RN L18 1

     FILE 'REGISTRY' ENTERED AT 12:26:48 ON 29 AUG 2007
L19          11 S E1-E11
L20           0 S ABB=ON PLU=ON "1,1-CYCLOHEXANEDIACETIC ACID"+RTCS, NEW, OLD/C
L21           0 S ABB=ON PLU=ON GABAPENTINE+RTCS, NEW, OLD, PFT/CT
L22           7 S GABAPENTIN
L23           0 S L22 AND L2
L24           0 S L22 AND L3

     FILE 'HCAPLUS' ENTERED AT 12:40:47 ON 29 AUG 2007
L25        1956 S GABAPENTIN
L26           0 S L25 AND L3
L27          20 S L25 AND L6
L28           4 S L27 AND L7
L29          99 S 1,1-CYCLOHEXANEDIACETIC ACID
L30           4 S L29 (3W) L6
L31           3 S L30 NOT L28
L32           2 S L29 AND L17 NOT L28

=> 129 and 18
L29 IS NOT A RECOGNIZED COMMAND
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The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s l29 and l8
L33          2 L29 AND L8

=> d l33 1-2 ibib abs

L33  ANSWER 1 OF 2  HCAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         2006:15055  HCAPLUS
DOCUMENT NUMBER:          144:108021
TITLE:                    Process for the preparation of a gabapentin precursor
INVENTOR(S):              Villa, Marco; Paiocchi, Maurizio; Arrighi, Katiuscia;
                          Corcella, Francesco; Cannata, Vincenzo; Soriato,
                          Giorgio; Verzini, Massimo
PATENT ASSIGNEE(S):       Zambon Group S.P.A., Italy
SOURCE:                   PCT Int. Appl., 18 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.        DATE
     ---------------      ----   --------    --------------------   --------
     WO 2006000562         A1    20060105    WO 2005-EP52906        20050622
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
             CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ,
             LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA,
             NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK,
             SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,
             ZA, ZM, ZW
         RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
             IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF,
             CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM,
             KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG,
             KZ, MD, RU, TJ, TM
     CA 2570461            A1    20060105    CA 2005-2570461        20050622
     EP 1765770            A1    20070328    EP 2005-776192         20050622
         R:  AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
             IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA,
             HR, LV, MK, YU
     IN 2006CN04728        A     20070629    IN 2006-CN4728         20061222
PRIORITY APPLN. INFO.:                       IT 2004-MI1271      A  20040624
                                             WO 2005-EP52906     W  20050622
OTHER SOURCE(S):          CASREACT 144:108021
AB   A process for the preparation of 1,1-cyclohexane acetic acid monoamide, an
     intermediate used in the preparation of gabapentin, comprises the basic
     hydrolysis reaction of α,α-diaminocarbonyl-β,β-
     pentamethylene glutarimide.
REFERENCE COUNT:          3     THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS
                                RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33  ANSWER 2 OF 2  HCAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         2003:22835  HCAPLUS
DOCUMENT NUMBER:          138:73019
TITLE:                    Amidation process for the preparation of 1,
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1-cyclohexanediacetic acid
monoamide from 1,1-cyclohexanediacetic anhydride and
aqueous ammonia

INVENTOR(S): Oren, Jacob
PATENT ASSIGNEE(S): Bromine Compounds Ltd., Israel
SOURCE: PCT Int. Appl., 15 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003002517	A1	20030109	WO 2002-IL473	20020617
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002311607	A1	20030303	AU 2002-311607	20020617
PRIORITY APPLN. INFO.:			IL 2001-144066 A	20010628
			WO 2002-IL473 W	20020617

OTHER SOURCE(S): CASREACT 138:73019

AB 1,1-Cyclohexanediacetic acid monoamide (CHDAAM), a gabapentin intermediate (no data), is prepared in high yield and selectivity by amination of 1,1-cyclohexanediacetic anhydride (CDAAn) with aqueous ammonia, followed by neutralization of the reaction mixture with an acid (e.g., H2SO4) such that crude CHDAAM is precipitated, filtered, and purified by crystallization from a solvent. The amination is carried out at <20° with aqueous ammonia having a concentration of 25-35% and in a molar ratio, relative to the CHDAAn, of 5-10, resp. The neutralization is carried out with an aqueous solution of H2SO4 having a concentration of 30-70% and is continued until a slightly acid solution is obtained.

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s l29 and l9 not l28
L34 0 L29 AND L9 NOT L28

=> file casreact

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	83.13	279.56

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-8.58	-8.58

FILE 'CASREACT' ENTERED AT 12:53:00 ON 29 AUG 2007
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FILE CONTENT:1840 - 25 Aug 2007 VOL 147 ISS 10

New CAS Information Use Policies, enter HELP USAGETERMS for details.

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*                                                            *
*     CASREACT now has more than 12 million reactions        *
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Some CASREACT records are derived from the ZIC/VINITI database (1974-1999) provided by InfoChem, INPI data prior to 1986, and Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich.

This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> s 1,1-cyclohexanediacetic acid
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        414776 1
            55 CYCLOHEXANEDIACETIC
        218720 ACID
         68281 ACIDS
        231553 ACID
                  (ACID OR ACIDS)
L35          26 1,1-CYCLOHEXANEDIACETIC ACID
                  (1(W)1(W)CYCLOHEXANEDIACETIC(W)ACID)

=> s amination
         19881 AMINATION
           168 AMINATIONS
L36      19903 AMINATION
                  (AMINATION OR AMINATIONS)

=> s precipitation
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             1 PRECIPITATIONS
L37        235 PRECIPITATION
                  (PRECIPITATION OR PRECIPITATIONS)

=> s monoamide
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L38        243 MONOAMIDE
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=> s 1,1-cyclohexanediacetic acid anhydride
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        414776 1
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        218720 ACID
         68281 ACIDS
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         26192 ANHYDRIDE
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L39           1 1,1-CYCLOHEXANEDIACETIC ACID ANHYDRIDE
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L40           2 L35 AND L36

=> d l40 1-2 ibib abs


L40  ANSWER 1 OF 2  CASREACT  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         138:73019  CASREACT
TITLE:                    Amidation process for the preparation of 1,
                          1-cyclohexanediacetic acid
                          monoamide from 1,1-cyclohexanediacetic anhydride and
                          aqueous ammonia
INVENTOR(S):              Oren, Jacob
PATENT ASSIGNEE(S):       Bromine Compounds Ltd., Israel
SOURCE:                   PCT Int. Appl., 15 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
     WO 2003002517      A1   20030109       WO 2002-IL473    20020617
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ,
             UA, UG, US, UZ, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
             CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     AU 2002311607      A1   20030303       AU 2002-311607   20020617
PRIORITY APPLN. INFO.:                     IL 2001-144066   20010628
                                           WO 2002-IL473    20020617

AB   1,1-Cyclohexanediacetic acid
     monoamide (CHDAAM), a gabapentin intermediate (no data), is prepared in high
     yield and selectivity by amination of 1,1-cyclohexanediacetic
     anhydride (CDAAn) with aqueous ammonia, followed by neutralization of the
     reaction mixture with an acid (e.g., H2SO4) such that crude CHDAAM is
precipitated,
     filtered, and purified by crystallization from a solvent.  The amination
     is carried out at <20° with aqueous ammonia having a concentration of 25-35%
     and in a molar ratio, relative to the CHDAAn, of 5-10, resp.  The
     neutralization is carried out with an aqueous solution of H2SO4 having a
concentration
     of 30-70% and is continued until a slightly acid solution is obtained.
REFERENCE COUNT:          2     THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS
                                RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT
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L40 ANSWER 2 OF 2 CASREACT COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 54:80337 CASREACT
TITLE: Compounds derived from β-substituted glutaric acids: glutarimides, glutaramic acids, 1,5-pentanediols
AUTHOR(S): Handley, G. J.; Nelson, E. R.; Somers, T. C.
CORPORATE SOURCE: Nicholas Inst., Victoria
SOURCE: Australian Journal of Chemistry (1960), 13, 127-44
CODEN: AJCHAS; ISSN: 0004-9425
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB α,α'-Dicyano-β,β-dialkylglutarimides (I) were obtained by the Guareschi synthesis (CA 14, 172) the scope of which was discussed. β,β-Dialkylglutaric acids (II) were prepared by dissolving 0.5 mole I in 250 ml. warm, concentrated H2SO4, adding 250 ml. H2O slowly with shaking and refluxing the mixture until no solid remained (8 hrs.). The oily layer which separated solidified on cooling and was collected and dissolved in ether. The solution was washed with H2O, extracted with saturated NaHCO3 solution, the extract acidified and extracted with Et2O. Evaporation of the Et2O left a residue which could be recrystd. from ligroine-benzene. Diethyl β,β-dialkylglutarates (III) were prepared from II by refluxing with EtOH-H2SO4. β,β-Dialkylglutarimides (IV) were prepared directly from 0.5 mole II by heating 2-3 hrs. with 1 mole urea in an oil bath at 170-90° and recrystg. from H2O or EtOH. β,β-Dialkyl-N-substituted-glutarimides (V) were obtained from 0.1 mole anhydride of II (prepared by refluxing II with Ac2O) and 0.1 mole appropriate primary amine by mixing and then heating in an oil bath at 170-90° for 2-3 hrs. The following I and their products were prepared α,α'-Dicyano-β,β-dimethylglutarimide (69% yield), m. 214-15°, gave β,β-dimethylglutaric acid (72%), m. 102-3°; diethyl ester (67%), b2 93°, n2D 1.4290; imide (80%), m. 144°; N-Me imide (81%), m. 56-8°. α,α'-Dicyano-β-ethyl-β-methylglutarimide (73%), m. 192-3°, gave β-ethyl-β-methylglutaric acid (89%), m. 86-7°; diethyl ester (76%) b3 110°, n21D 1.4343; imide (71%) m. 126-7°; N-Me imide (61%), b7 126-30°, n22D 1.4743; N-Et imide (60%), b6 110-12°, n22D 1.4709; N-Ph imide (65%), m. 128°; N-(p-MeC6H4) imide (74%), m. 150-1°, N-PhCH2 imide (69%), b1 160°, n22D 1.5294. α,α'-Dicyano-β-methyl-β-propylglutarimide (79%), m. 202-3°, gave β-methyl-β-propylglutaric acid (86%), m. 89-91°; diethyl ester (70%) b3.5 114-15°, n21D 1.4359; imide (46%) m. 119-20°. α,α'-Dicyano-β-methyl-β-isopropylglutarimide (13%), m. 234-6°, gave β-methyl-β-isopropylglutaric acid (90%), m. 100°; imide (90%) m. 165-6°; N-Me imide (75%) b25 165-70°, n22D 1.4812. α,α'-Dicyano-β-butyl-β-methylglutarimide (77%), m. 174-5°, gave β-butyl-β-methylglutaric acid (85%), m. 63-5°; diethyl ester (60%) b13 168°, n28D 1.4339; imide (63%) m. 115-15.5°; N-Me imide (67%) b7 140°, n20D 1.4762; N-Et imide (63%) b6 136°, n20D 1.4712. α,α'-Dicyano-β-isobutyl-β-methylglutarimide (39%), m. 237-8°, gave β-isobutyl-β-methylglutaric acid (74%), m. 66-8°; imide (90%) m. 103-4°. α,α'-Dicyano-β-methyl-β-pentylglutarimide (65%), m. 166-7°, gave β-methyl-β-

pentylglutaric acid (91%, including 1/5 as imide), m. 73-4°; diethyl ester (70%) b14 170°, n21D 1.4392; imide (74%) m. 113-14°; N-Me imide (56%) b4 132°, m. 43-4°; N-Et imide (61%) b5 142°, n21D 1.4708. α,α'-Dicyano-β-methyl-β-isopentylglutarimide (62%), m. 196-7°, gave β-methyl-β-isopentylglutaric acid (91%), m. 70-73°; imide (78%) m. 120-1°. α,α'-Dicyano-β-hexyl-β-methylglutarimide (50%) m. 152-3°, gave β-hexyl-β-methylglutaric acid (76%, including 1/3 as imide), m. 66-7°; diethyl ester (73%) b4 164°, n21D 1.4414; imide (60%) m. 99.5-100.5°; N-Me imide (49%) b7 162°, n21D 1.4745; N-Et imide (57%) b6 160°, n21D 1.4717. α,α'-Dicyano-β-isohexyl-β-methylglutarimide (64%), m. 161-6°, gave β-isohexyl-β-methylglutaric acid (92%, including 1/3 as imide), m. 79-80°; imide (90%) m. 107-8.5°. α,α'-Dicyano-β-heptyl-β-methylglutarimide (58%), m. 147.5-9.0°, gave on hydrolysis only β-heptyl-β-methylglutarimide (90%), m. 95-6° (cf. Birch and Robinson, CA 37, 6033). α,α'-Dicyano-β-methyl-β-nonylglutarimide (80%), m. 136°, gave β-methyl-β-nonylglutaric acid (78%, including 1/2 as imide), m. 44-7°; imide (85%) m. 100°. α,α'-Dicyano-β-methyl-β-phenylglutarimide (2%, and 27% by the method of McElvain and Clemens, CA 53, 3215c), m. 275°, gave on hydrolysis with 50-55% weight/weight H2SO4 under reflux for 24 hrs. β-methyl-β-phenylglutaric acid (82%), m. 140-2°; imide (90%) m. 156-7°. α,α'-Dicyano-β-benzyl-β-methylglutarimide (76%), m. 249-50°, decomposed under the hydrolysis conditions (Kon and Stevenson, CA 15, 1279). α,α'-Dicyano-β,β-diethylglutarimide (35%), m. 204-6°, gave β,β-diethylglutaric acid (81%), m. 108°; imide (74%) m. 146-7°. α,α'-Dicyano-β,β-dipropylglutarimide (9%), m. 215-16°, gave β,β-dipropylglutaric acid (70%), m. 117-18°; imide (71%) m. 125°. α,α'-Dicyano-β-spiro(cyclopentane) glutarimide (17%), m. 179-80°, gave β-spiro(cyclopentane)glutaric acid (80%), m. 177-8°; imide (56%), m. 153°. α,α'-Dicyano-β-spiro(cyclohexane)glutarimide (74%), m. 208-10°, gave β-spirocyclohexane glutaric acid (93%), m. 182-3°; diethyl ester (78%) b3.5 138-40°, n25D 1.4573; imide (80%) m. 169-70°; N-Me imide (67%) m. 69-70°. α,α'-Dicyano-β-spiro(α-methylcyclohexane)glutarimide (16%), m. 243° (decomposition), gave β-spiro(α-methylcyclohexane)glutaric acid (82%), m. 143-5°; imide (60%) m. 122-4°. α,α'-Dicyano-β-spiro(cycloheptane)glutarimide (8%), m. 205-6°, gave β-spiro(cycloheptane)glutaric acid (62%), m. 155-6°; imide (71%) m. 177-8°. No imide was obtained in the Guareschi synthesis from MeCH(OH)Ac, AcCH2CO2Et, Et2N(CH2)2Ac, EtCO(CH2)4Me, EtCOPh, iso-Bu2CO, or Ph2CO. A series of 2,2-dialkyl-1,1,3,3-tetracarboxy propane diimides (VI) were prepared by dissolving 5 g. of the appropriate I in 20 ml. 60% H2SO4. The solution was heated several min. until a white solid appeared and for a further 1 min., then cooled, the precipitate collected, washed with H2O and recrystd. from H2O. Thus were prepared 2,2-dimethyl-1,1,3,3-tetracarboxypropane diimide (45% yield), m. above 360°, 2-ethyl-2-methyl-1,1,3,3-tetracarboxypropane diimide (38%), m. 329-31°, 2-methyl-2-propyl-1,1,3,3-tetracarboxypropane diimide (85%), m. 278-80°, 2-butyl-2-methyl-1,1,3,3-tetracarboxypropane diimide (75%), m. 278-80°, 2-methyl-2-pentyl-1,1,3,3-

tetracarboxypropane diimide (70%), m. 237-8°, 2-hexyl-2-methyl-1,1,3,3-tetracarboxypropane diimide (55%), m. 214°, and 2-spiro(cyclohexane)-1,1,3,3-tetracarboxypropane diimide (65%), m. above 370°. Hydrolysis of I with cold, concentrated H2SO4 for 24 hrs. (Thorpe and Wood, CA 8, 490) gave mixts. of VI and the corresponding α,α'-dicarboxamido-β,β-dialkylglutarimides, except with α,α'-dicyano-β,β-dimethylglutarimide which gave only α,α'-dicarboxamido-β,β-dimethylglutarimide (70%), m. above 330° (H2O), and with α,α'-dicyano-β-ethyl-β-methylglutarimide which gave only α,α'-dicarboxamido-β-ethyl-β-methylglutarimide (75%), m. 277° (decomposition). A series of β,β-dialkylglutaramic acids were prepared by refluxing the 0.1 mole appropriate IV with 0.1 mole NaOH in 35 ml. H2O for 30 min. The solution was cooled, filtered, acidified with concentrated HCl, the precipitated oil solidified by rubbing, and the solid recrystd. from H2O. Thus were prepared β-ethyl-β-methylglutaramic acid (85% yield), m. 84-5°, β-methyl-β-propylglutaramic acid (88%), m. 98-8°, β-methyl-β-isopropylglutaramic acid (85%), m. 118°, β-butyl-β-methylglutaramic acid (93%), m. 88-91°, β-isobutyl-β-methylglutaramic acid (90%), m. 96°, β-methyl-β-pentylglutaramic acid (95%), m. 86-8°, β-hexyl-β-methylglutaramic acid (82%), m. 63-5°, β,β-diethylglutaramic acid (90%), m. 130°, β-spiro(cyclopentane) glutaramic acid (85%), m. 110°, and β-spiro(cyclohexyl)glutaramic acid (80%), m. 141-5°. The series of 3,3-dialkyl-1,5-pentanediols (VII) prepared by reduction of the appropriate III with LiAlH4 in Et2O included: 3,3-dimethyl-1,5-pentanediol (50% yield), b3 131°, n26D 1.4510; 3-ethyl-3-methyl-1,5-pentanediol (85%), b10 160-2°, n23D 1.4640; 3-methyl-3-propyl-1,5-pentanediol (75%), b3 144, n26D 1.4618; 3-butyl-3-methyl-1,5-pentanediol (83%), b0.5 134°, n26D 1.4629; 3-methyl-3-pentyl-1,5-pentanediol (80%), b1 168-9°, n23D 1.4640; 3-hexyl-3-methyl-1,5-pentanediol (92%) b1, 182-4°, n25D 1.4631; 3-spiro(cyclohexane)-1,5-pentanediol (62%), b2 166°, n25D 1.4930. A series of β-alkylglutaric acids was prepared by condensation of the appropriate aldehydes with NCCH2CONH2 (cf. Day and Thorpe, CA 15, 1134) and hydrolysis of the resulting α,α'-dicyano-β-alkylglutarimides (VIII) as above for I. Thus were prepared: β-methylglutaric acid (71% yield from VIII), m. 84-5° [imide (58%) m. 142-3°; N-phenethyl imide (61%), m. 100-1°]; β-ethylglutaric acid (74%), m. 67-9° [imide (53%), m. 84-5°]; β-propylglutaric acid (70%), m. 48-50° [imide (70%) m. 113-13.5°]; β-isobutylglutaric acid (50%), m. 47-8° [imide (70%) m. 138-8.5°]; β-hexylglutaric acid (62%), m. 36-8° [imide (72%) m. 112-13°]. β-Phenylglutaric acid gave the imide (75%), m. 173-4°, N-Me imide (62%), m. 141-2°, and N-Et imide (79%), m. 94°. Hypnotic, convutsant, analeptic, and barbiturate-antagonistic effects of IV, and sedative and hypnotic effects of VII are discussed. The other series had no appreciable pharmacol. activity.

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=> s acidification
          3187 ACIDIFICATION
             1 ACIDIFICATIONS
L41       3188 ACIDIFICATION
                (ACIDIFICATION OR ACIDIFICATIONS)

=> d his
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     (FILE 'HOME' ENTERED AT 11:48:54 ON 29 AUG 2007)

     FILE 'STNGUIDE' ENTERED AT 11:49:06 ON 29 AUG 2007

     FILE 'HCAPLUS' ENTERED AT 11:50:33 ON 29 AUG 2007
L1             0 SEA ABB=ON PLU=ON  "CYCLOHEXANEDIACETIC ACID"+PFT, OLD, NEW/CT

     FILE 'REGISTRY' ENTERED AT 11:55:02 ON 29 AUG 2007
                E CYCLOHEXANEDIACETIC/CN

     FILE 'HCAPLUS' ENTERED AT 11:55:03 ON 29 AUG 2007
                S E4

     FILE 'REGISTRY' ENTERED AT 11:56:31 ON 29 AUG 2007
L2             1 S E4/CN

     FILE 'HCAPLUS' ENTERED AT 11:56:31 ON 29 AUG 2007
L3             8 S L2
                E CYCLOHEXANEDIACETIC ACID ANHYDRIDE
L4        230564 S ANHYDRIDE
L5             0 S L4 (3W) L3
L6        230564 SEA ABB=ON PLU=ON ANHYDRIDE
L7          1633 S ABB=ON PLU=ON MONOAMIDE
L8         19338 S ABB=ON PLU=ON PRECIPITATION+PFT, OLD, NEW/CT
L9             2 S ABB=ON PLU=ON ACIDIFICATION+PFT, NEW, OLD/CT
L10       214418 S ABB=ON PLU=ON AMMONIA
L11            0 S "HYDROCHLORIC ACID"+PFT, OLD, NEW/CT
                E HYDROCHLORIC ACID
L12           12 S E5
L13            0 S ABB=ON PLU=ON "ACETIC ANHDRIDE"+PFT, NEW, OLD/CT
                E ACETIC ANHYDRIDE
L14       247054 S ACETIC
L15        26509 S L14 (1W) L4
L16      6805049 S ABB=ON PLU=ON SYNTH OR SYNTHE? OR PREPARTION OR PRODUC? OR PR
L17       157279 S ABB=ON PLU=ON AMINATION+PFT, OLD, NEW, RT/CT
                E US4024175/PN
L18            1 S E3
                SELECT RN L18 1

     FILE 'REGISTRY' ENTERED AT 12:26:48 ON 29 AUG 2007
L19           11 S E1-E11
L20            0 S ABB=ON PLU=ON "1,1-CYCLOHEXANEDIACETIC ACID"+RTCS, NEW, OLD/C
L21            0 S ABB=ON PLU=ON GABAPENTINE+RTCS, NEW, OLD, PFT/CT
L22            7 S GABAPENTIN
L23            0 S L22 AND L2
L24            0 S L22 AND L3

     FILE 'HCAPLUS' ENTERED AT 12:40:47 ON 29 AUG 2007
L25         1956 S GABAPENTIN
L26            0 S L25 AND L3
L27           20 S L25 AND L6
L28            4 S L27 AND L7
L29           99 S 1,1-CYCLOHEXANEDIACETIC ACID
L30            4 S L29 (3W) L6
L31            3 S L30 NOT L28
L32            2 S L29 AND L17 NOT L28
L33            2 S L29 AND L8
L34            0 S L29 AND L9 NOT L28
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     FILE 'CASREACT' ENTERED AT 12:53:00 ON 29 AUG 2007
L35          26 S 1,1-CYCLOHEXANEDIACETIC ACID
L36       19903 S AMINATION
L37         235 S PRECIPITATION
L38         243 S MONOAMIDE
L39           1 S 1,1-CYCLOHEXANEDIACETIC ACID ANHYDRIDE
L40           2 S L35 AND L36
L41        3188 S ACIDIFICATION

=> s l38 and l35
L42           6 L38 AND L35

=> s l42 and l37
L43           2 L42 AND L37

=> d l43 1-2 ibib abs


L43  ANSWER 1 OF 2  CASREACT  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         144:108021  CASREACT
TITLE:                    Process for the preparation of a gabapentin precursor
INVENTOR(S):              Villa, Marco; Paiocchi, Maurizio; Arrighi, Katiuscia;
                          Corcella, Francesco; Cannata, Vincenzo; Soriato,
                          Giorgio; Verzini, Massimo
PATENT ASSIGNEE(S):       Zambon Group S.P.A., Italy
SOURCE:                   PCT Int. Appl., 18 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.         KIND  DATE           APPLICATION NO.  DATE
     ---------------    ----  --------       ---------------  --------
     WO 2006000562       A1   20060105       WO 2005-EP52906  20050622
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
             CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ,
             LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA,
             NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK,
             SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,
             ZA, ZM, ZW
         RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
             IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF,
             CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM,
             KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG,
             KZ, MD, RU, TJ, TM
     CA 2570461          A1   20060105       CA 2005-2570461  20050622
     EP 1765770          A1   20070328       EP 2005-776192   20050622
         R:  AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
             IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA,
             HR, LV, MK, YU
     IN 2006CN04728      A    20070629       IN 2006-CN4728   20061222
PRIORITY APPLN. INFO.:                      IT 2004-MI1271   20040624
                                            WO 2005-EP52906  20050622
AB   A process for the preparation of 1,1-cyclohexane acetic acid monoamide
     , an intermediate used in the preparation of gabapentin, comprises the basic
     hydrolysis reaction of α,α-diaminocarbonyl-β,β-
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pentamethylene glutarimide.
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L43 ANSWER 2 OF 2 CASREACT COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 138:73019 CASREACT
TITLE: Amidation process for the preparation of 1, 1-cyclohexanediacetic acid monoamide from 1,1-cyclohexanediacetic anhydride and aqueous ammonia
INVENTOR(S): Oren, Jacob
PATENT ASSIGNEE(S): Bromine Compounds Ltd., Israel
SOURCE: PCT Int. Appl., 15 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003002517	A1	20030109	WO 2002-IL473	20020617
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002311607	A1	20030303	AU 2002-311607	20020617
PRIORITY APPLN. INFO.:			IL 2001-144066	20010628
			WO 2002-IL473	20020617

AB 1,1-Cyclohexanediacetic acid monoamide (CHDAAM), a gabapentin intermediate (no data), is prepared in high yield and selectivity by amination of 1,1-cyclohexanediacetic anhydride (CDAAn) with aqueous ammonia, followed by neutralization of the reaction mixture with an acid (e.g., H2SO4) such that crude CHDAAM is precipitated, filtered, and purified by crystallization from a solvent. The amination is carried out at <20° with aqueous ammonia having a concentration of 25-35% and in a molar ratio, relative to the CHDAAn, of 5-10, resp. The neutralization is carried out with an aqueous solution of H2SO4 having a concentration of 30-70% and is continued until a slightly acid solution is obtained.
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s ammonia
8351 AMMONIA
3 AMMONIAS
L44 8354 AMMONIA
(AMMONIA OR AMMONIAS)

=> s l44 and l29
414776 1

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        414776 1
            55 CYCLOHEXANEDIACETIC
        218720 ACID
         68281 ACIDS
        231553 ACID
                  (ACID OR ACIDS)
            26 1,1-CYCLOHEXANEDIACETIC ACID
                  (1(W)1(W)CYCLOHEXANEDIACETIC(W)ACID)
L45          3 L44 AND L29

=> s l45 not l28
            74 GABAPENTIN
         25163 ANHYDRIDE
          4130 ANHYDRIDES
         26192 ANHYDRIDE
                  (ANHYDRIDE OR ANHYDRIDES)
           192 MONOAMIDE
            77 MONOAMIDES
           243 MONOAMIDE
                  (MONOAMIDE OR MONOAMIDES)
L46          1 L45 NOT L28

=> d l46 ibib abs


L46  ANSWER 1 OF 1  CASREACT  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         136:19880  CASREACT
TITLE:                    Preparation of 1-(2-amino-2-oxoethyl)cyclohexaneacetic
                          acid
INVENTOR(S):              Tang, Miaorong; Fan, Weirong; Liu, Tianchun; Zhang,
                          Xiaobo
PATENT ASSIGNEE(S):       Hangzhou Shouxin Fine Chemical Co., Ltd., Peop. Rep.
                          China
SOURCE:                   Faming Zhuanli Shenqing Gongkai Shuomingshu, 5 pp.
                          CODEN: CNXXEV
DOCUMENT TYPE:            Patent
LANGUAGE:                 Chinese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
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     CN 1297885         A    20010606       CN 2000-128111   20001201
     CN 1109017         B    20030521
PRIORITY APPLN. INFO.:                     CN 2000-128111   20001201
AB   1-(2-Amino-2-oxoethyl)cyclohexaneacetic acid is synthesized by condensing
     cyclohexanone with Et cyanoacetate in ethanol under bubbling NH3 for 18-26
     h, stirring at 0° for 18-26 h and at 25° for 100-130 h to
     obtain α,α-dicyano-1,1-cyclohexanediacetimide ammonium salt,
     hydrolyzing with H2SO4 solution at 200° for 30 min to obtain 1
     ,1-cyclohexanediacetic acid, dehydrating
     with acetic anhydride to obtain 1,1-cyclohexanediacetic anhydride,
     aminolyzing with NH3 or NH4OH at 30-110° for 3-8 h, and recrystg.
     with ethanol.


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     (FILE 'HOME' ENTERED AT 11:48:54 ON 29 AUG 2007)
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     FILE 'STNGUIDE' ENTERED AT 11:49:06 ON 29 AUG 2007

     FILE 'HCAPLUS' ENTERED AT 11:50:33 ON 29 AUG 2007
L1            0 SEA ABB=ON PLU=ON  "CYCLOHEXANEDIACETIC ACID"+PFT, OLD, NEW/CT

     FILE 'REGISTRY' ENTERED AT 11:55:02 ON 29 AUG 2007
                E CYCLOHEXANEDIACETIC/CN

     FILE 'HCAPLUS' ENTERED AT 11:55:03 ON 29 AUG 2007
                S E4

     FILE 'REGISTRY' ENTERED AT 11:56:31 ON 29 AUG 2007
L2            1 S E4/CN

     FILE 'HCAPLUS' ENTERED AT 11:56:31 ON 29 AUG 2007
L3            8 S L2
                E CYCLOHEXANEDIACETIC ACID ANHYDRIDE
L4       230564 S ANHYDRIDE
L5            0 S L4 (3W) L3
L6       230564 SEA ABB=ON PLU=ON ANHYDRIDE
L7         1633 S ABB=ON PLU=ON MONOAMIDE
L8        19338 S ABB=ON PLU=ON PRECIPITATION+PFT, OLD, NEW/CT
L9            2 S ABB=ON PLU=ON ACIDIFICATION+PFT, NEW, OLD/CT
L10      214418 S ABB=ON PLU=ON AMMONIA
L11           0 S "HYDROCHLORIC ACID"+PFT, OLD, NEW/CT
                E HYDROCHLORIC ACID
L12          12 S E5
L13           0 S ABB=ON PLU=ON "ACETIC ANHDRIDE"+PFT, NEW, OLD/CT
                E ACETIC ANHYDRIDE
L14      247054 S ACETIC
L15       26509 S L14 (1W) L4
L16     6805049 S ABB=ON PLU=ON SYNTH OR SYNTHE? OR PREPARTION OR PRODUC? OR PR
L17      157279 S ABB=ON PLU=ON AMINATION+PFT, OLD, NEW, RT/CT
                E US4024175/PN
L18           1 S E3
                SELECT RN L18 1

     FILE 'REGISTRY' ENTERED AT 12:26:48 ON 29 AUG 2007
L19          11 S E1-E11
L20           0 S ABB=ON PLU=ON "1,1-CYCLOHEXANEDIACETIC ACID"+RTCS, NEW, OLD/C
L21           0 S ABB=ON PLU=ON GABAPENTINE+RTCS, NEW, OLD, PFT/CT
L22           7 S GABAPENTIN
L23           0 S L22 AND L2
L24           0 S L22 AND L3

     FILE 'HCAPLUS' ENTERED AT 12:40:47 ON 29 AUG 2007
L25        1956 S GABAPENTIN
L26           0 S L25 AND L3
L27          20 S L25 AND L6
L28           4 S L27 AND L7
L29          99 S 1,1-CYCLOHEXANEDIACETIC ACID
L30           4 S L29 (3W) L6
L31           3 S L30 NOT L28
L32           2 S L29 AND L17 NOT L28
L33           2 S L29 AND L8
L34           0 S L29 AND L9 NOT L28

     FILE 'CASREACT' ENTERED AT 12:53:00 ON 29 AUG 2007
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L35	26	S	1,1-CYCLOHEXANEDIACETIC ACID
L36	19903	S	AMINATION
L37	235	S	PRECIPITATION
L38	243	S	MONOAMIDE
L39	1	S	1,1-CYCLOHEXANEDIACETIC ACID ANHYDRIDE
L40	2	S	L35 AND L36
L41	3188	S	ACIDIFICATION
L42	6	S	L38 AND L35
L43	2	S	L42 AND L37
L44	8354	S	AMMONIA
L45	3	S	L44 AND L29
L46	1	S	L45 NOT L28

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	9	((FRANCESCO) near2 (CORCELLA)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2007/08/29 15:31
L3	4	((GAETANO) near2 (MARCHIORO)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2007/08/29 15:31
L4	8	((ANDREA) near2 (NICOLI)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2007/08/29 15:32
L5	21	((MAURIZIO) near2 (PAIOCCHI)). INV.	US-PGPUB; USPAT; USOCR	OR	ON	2007/08/29 15:33
L6	48	((MARCO) near2 (VILLA)).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2007/08/29 16:00
L7	226	(562/125).ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:00
L8	680	cyclohexanediacetic near2 acid	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:00
L9	4631	monoamide	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:01
L10	83	(562/126).ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:01

EAST Search History

L11	24373	amination	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:01
L12	38611	acidification	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:02
L13	5	l8 near3 anhydride	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:07
L14	801727	ammonia	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:03
L15	17113	l14 and l11	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:03
L16	1	l15 and l10	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:05
L17	2	l13 and l11	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:08

EAST Search History

L18	22	l8 and l9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:09
L19	3	l18 and l12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:09
L20	276	l8 and l14	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:11
L21	10	l20 and l9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:13
L22	2	l13 and l12	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:14
L23	0	l8 and l7	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:14
L24	0	l8 and l10	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:14

EAST Search History

L25	0	l8 and l7 and anhydride	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:15
L26	0	l8 and l10 and anhydride	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2007/08/29 16:16
S1	3	("4024175").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/08/29 15:59
S2	2	("5091567").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/08/29 10:13
S3	2	("5068413").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/08/29 10:15
S4	0	("1,1-cyclohexanediaceticacid"). PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/08/29 13:42
S5	4	((KATIUSCIA) near2 (ARRIGHI)). INV.	US-PGPUB; USPAT; USOCR	OR	ON	2007/08/29 13:43
S6	38	((VINCENZO) near2 (CANNATA)). INV.	US-PGPUB; USPAT; USOCR	OR	ON	2007/08/29 15:27